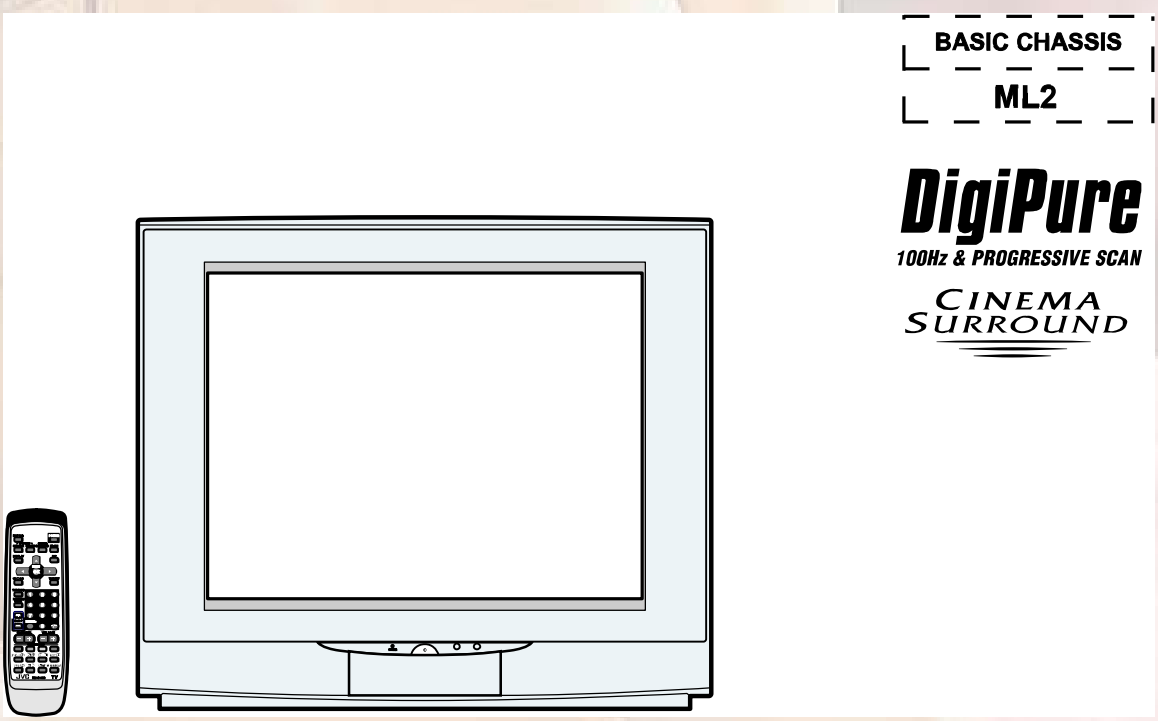
JVC

SERVICE MANUAL

COLOUR TELEVISION

2004

HV-29JH24, HV-29JH74/G



BASIC CHASSIS

ML2

DigiPure

100Hz & PROGRESSIVE SCAN

CINEMA SURROUND

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No.YA164
2004/11

SPECIFICATION

Items		Contents
Dimensions (W × H × D)		73.1cm × 62.2cm × 49.4cm
Mass		44kg
TV RF System		B, G, I, D, K, K1, M
Colour System		PAL / SECAM / NTSC 3.58 / NTSC 4.43
Stereo System		A2 (B/G, D/K), NICAM (B/G, I, D/K)
Teletext System		FLOF (Fastext), WST (World Standard System)
Receiving Frequency	VHF Low VHF High UHF CATV	46.25MHz ~ 168.25MHz 175.25MHz ~ 463.25MHz 471.25MHz ~ 855.25MHz Mid (X ~ Z+2, S1 ~ S10) / Super (S11 ~ S20) / Hyper (S21 ~ S41) bands
Intermediate Frequency	VIF SIF	38.0MHz (B, G, I, D, K, L) 32.26MHz (5.74MHz: B), 32.15MHz (5.85MHz: G), 31.45MHz (6.55MHz: I) 31.75MHz (6.25MHz: D), 32.15MHz (5.85MHz: K)
Colour Sub Carrier	PAL SECAM NTSC	4.43MHz 4.40625MHz / 4.25MHz 3.58MHz / 4.43MHz
Power Input		AC110V ~ 240V, 50Hz/60Hz
Power Consumption		Avg.150W
Picture Tube		Visible size : 67.6cm, Measured diagonally H: 55.4cm × V: 41.4cm
High Voltage		31.0kV (+1kV / -1.5kV) (at zero beam current)
Speaker		6.5cm × 13cm, oval type × 2
Audio Power Output		10 W + 10 W (Rated power output)
Aerial Input		75 Ω unbalanced, coaxial
Video / Audio INPUT-1/2/3/4	Component Video [INPUT-3] 625i / 525i / 625p / 525p S-Video [INPUT-1/4] Video Audio	RCA pin jack × 3 Y : 1V (p-p), Positive (Negative sync provided), 75 Ω Cb/Cr : 0.7V(p-p), 75 Ω Mini-DIN 4 pin connector × 2 Y: 1V (p-p), Positive (Negative sync provided), 75 Ω C: 0.286V (p-p) (Burst signal), 75 Ω 1V (p-p), Positive (Negative sync provided), 75 Ω, RCA pin jack × 4 500mV (rms), High impedance, RCA pin jack × 8
Video / Audio Output	Video Audio	1V (p-p), Positive (Negative sync provided), 75 Ω, RCA pin jack × 1 500mV (rms), Low impedance, RCA pin jack × 2
Headphone jack		3.5 mm stereo mini jack × 1
Remote Control Unit		RM-C1351 (UM-3/AA/R6 dry cell battery × 2) [HV-29JH24] RM-C1350 (UM-3/AA/R6 dry cell battery × 2) [HV-29JH74/G]

Design and specifications subject to change without notice.

SECTION 1
PRECAUTION

1.1 SAFETY PRECAUTIONS

(1) The design of this product contains special hardware, many circuits and components specially for safety purposes. For continued protection, no changes should be made to the original design unless authorized in writing by the manufacturer. Replacement parts must be identical to those used in the original circuits. Service should be performed by qualified personnel only.

(2) Alterations of the design or circuitry of the products should not be made. Any design alterations or additions will void the manufacturer's warranty and will further relieve the manufacturer of responsibility for personal injury or property damage resulting therefrom.

(3) Many electrical and mechanical parts in the products have special safety-related characteristics. These characteristics are often not evident from visual inspection nor can the protection afforded by them necessarily be obtained by using replacement components rated for higher voltage, wattage, etc. Replacement parts which have these special safety characteristics are identified in the parts list of Service manual. **Electrical components having such features are identified by shading on the schematics and by (⚠) on the parts list in Service manual**. The use of a substitute replacement which does not have the same safety characteristics as the recommended replacement part shown in the parts list of Service manual may cause shock, fire, or other hazards.

(4) **Don't short between the LIVE side ground and ISOLATED (NEUTRAL) side ground or EARTH side ground when repairing.**
Some model's power circuit is partly different in the GND. The difference of the GND is shown by the LIVE : (⊥) side GND, the ISOLATED (NEUTRAL) : (⏚) side GND and EARTH : (⏚) side GND.
Don't short between the LIVE side GND and ISOLATED (NEUTRAL) side GND or EARTH side GND and never measure the LIVE side GND and ISOLATED (NEUTRAL) side GND or EARTH side GND at the same time with a measuring apparatus (oscilloscope etc.). If above note will not be kept, a fuse or any parts will be broken.

(5) If any repair has been made to the chassis, it is recommended that the B1 setting should be checked or adjusted (See B1 VOLTAGE).

(6) The high voltage applied to the picture tube must conform with that specified in Service manual. Excessive high voltage can cause an increase in X-Ray emission, arcing and possible component damage, therefore operation under excessive high voltage conditions should be kept to a minimum, or should be prevented. If severe arcing occurs, remove the AC power immediately and determine the cause by visual inspection (incorrect installation, cracked or melted high voltage harness, poor soldering, etc.). To maintain the proper minimum level of soft X-Ray emission, components in the high voltage circuitry including the picture tube must be the exact replacements or alternatives approved by the manufacturer of the complete product.

(7) Do not check high voltage by drawing an arc. Use a high voltage meter or a high voltage probe with a VTVM. Discharge the picture tube before attempting meter connection, by connecting a clip lead to the ground frame and connecting the other end of the lead through a 10kΩ 2W resistor to the anode button.

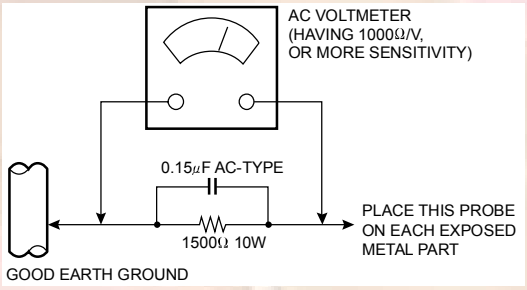
(8) When service is required, observe the original lead dress. Extra precaution should be given to assure correct lead dress in the high voltage circuit area. Where a short circuit has occurred, those components that indicate evidence of overheating should be replaced. Always use the manufacturer's replacement components.

(9) **Isolation Check (Safety for Electrical Shock Hazard)**
After re-assembling the product, always perform an isolation check on the exposed metal parts of the cabinet (antenna terminals, video/audio input and output terminals, Control knobs, metal cabinet, screw heads, earphone jack, control shafts, etc.) to be sure the product is safe to operate without danger of electrical shock.

a) **Dielectric Strength Test**
The isolation between the AC primary circuit and all metal parts exposed to the user, particularly any exposed metal part having a return path to the chassis should withstand a voltage of 3000V AC (r.m.s.) for a period of one second. (. . . Withstand a voltage of 1100V AC (r.m.s.) to an appliance rated up to 120V, and 3000V AC (r.m.s.) to an appliance rated 200V or more, for a period of one second.)
This method of test requires a test equipment not generally found in the service trade.

b) **Leakage Current Check**
Plug the AC line cord directly into the AC outlet (do not use a line isolation transformer during this check.). Using a "Leakage Current Tester", measure the leakage current from each exposed metal part of the cabinet, particularly any exposed metal part having a return path to the chassis, to a known good earth ground (water pipe, etc.). Any leakage current must not exceed 0.5mA AC (r.m.s.).
However, in tropical area, this must not exceed 0.2mA AC (r.m.s.).

Alternate Check Method
Plug the AC line cord directly into the AC outlet (do not use a line isolation transformer during this check.). Use an AC voltmeter having 1000Ω per volt or more sensitivity in the following manner. Connect a 1500Ω 10W resistor paralleled by a 0.15μF AC-type capacitor between an exposed metal part and a known good earth ground (water pipe, etc.). Measure the AC voltage across the resistor with the AC voltmeter. Move the resistor connection to each exposed metal part, particularly any exposed metal part having a return path to the chassis, and measure the AC voltage across the resistor. Now, reverse the plug in the AC outlet and repeat each measurement. Any voltage measured must not exceed 0.75V AC (r.m.s.). This corresponds to 0.5mA AC (r.m.s.).
However, in tropical area, this must not exceed 0.3V AC (r.m.s.). This corresponds to 0.2mA AC (r.m.s.).



SECTION 2
SPECIFIC SERVICE INSTRUCTIONS

2.1 FEATURES

DigiPure

This function uses the latest in digital technology to give you a natural-looking picture.

Progressive Scan (525P / 625P signal possible)

This TV can display the Progressive video signal both of 525P (NTSC) and 625P (PAL) signal.

Cinema Surround

The Cinema Surround function gives you a surround sound with a "live" effect.

PICTURE MODE

This function can adjust the picture settings automatically. There are BRIGHT, STANDARD and SOFT in the PICTURE MODE.

RETURN +

This function can set a channel you frequently view to the Return Channel and you can view that channel at any time with one-touch.

2.2 MAIN DIFFERENCE LIST

Item	HV-29JH24	HV-29JH74/G
PIP Function	NO	YES
REMOTE CONTROL UNIT	RM-C1351-1H	RM-C1350-2H
MAIN P.W.B	SML-1512A-H2	SML-1513A-H2
POWER & DEF P.W.B	SML-2505A-H2	←
CRT SOKET P.W.B	SML-3503A-H2	←
FRONT CONTROL P.W.B	SML-8502A-H2	←
AV JACK P.W.B	SML0J505A-H2	SML0J506A-H2
MICON/100HZ P.W.B	SML0Z504A-H2	SML0Z503A-H2

2.3 TECHNINAL INFORMATION

2.3.1 MAIN MI-COM (CPU) PIN FUNCTION

Pin No.	Pin name	I/O	Function	Pin No.	Pin name	I/O	Function
1	TCK	I	Not used	65	D2	I/O	Data bit for PP-RAM/SD-RAM
2	TMS	I	Not used	66	D12	I/O	Data bit for PP-RAM/SD-RAM
3	TDI	I	Not used	67	D10	I/O	Data bit for PP-RAM/SD-RAM
4	TDO	O	Not used	68	VSS33	--	GND
5	P2.8	I	Remote control	69	VDD33	i	3.3V
6	P2.9	I	Key scan for front control CH+(On: L)	70	D4	I/O	Data bit for PP-RAM/SD-RAM
7	P2.10	I	Key scan for front control CH- (On: L)	71	D3	I/O	Data bit for PP-RAM/SD-RAM
8	P2.11	I	Key scan for front control MENU (On: L)	72	D11	I/O	Data bit for PP-RAM/SD-RAM
9	P2.12	I	Receive data for TV_LINK	73	RSTIN	I	Reset for main CPU
10	P2.13	O	Power on /off control (ON: L)	74	P3.0	I/O	Data for inter IC control bus
11	P2.14	I	X-ray HB LB EW correction Protection detection (Normal: H)	75	P3.1	I/O	Data for inter IC control bus
12	P2.15	I	Main power detection (Normal: H)	76	P3.2	I	Remote control
13	VSS33	--	GND	77	P3.3	O	Power indication control (On: L)
14	VDD33	i	3.3V	78	P3.4	O	Audio muting (Muting: H)
15	P4.5/CS3	O	Output data for TV_LINK	79	P3.5	O	Audio muting (Muting: H)
16	P4.4/A20	O	Address bit for PP-RAM/SD-RAM	80	P3.6	O	Not used
17	P4.3/A19	O	Address bit for PP-RAM/SD-RAM	81	P3.7	O	Not used
18	P4.2/A18	O	Address bit for PP-RAM/SD-RAM	82	P3.8	I/O	Not used
19	P4.1/A17	O	Address bit for PP-RAM/SD-RAM	83	P3.9	I/O	Not used
20	VSS25	--	GND	84	VSS33	--	GND
21	VDD25	I	2.5V	85	VDD33	I	3.3V
22	P4.0/A16	O	Address bit for PP-RAM/SD-RAM	86	VSS25	--	GND
23	A8	O	Address bit for PP-RAM/SD-RAM	87	VDD25	I	2.5V
24	A7	O	Address bit for PP-RAM/SD-RAM	88	TXD0	I/O	Not used
25	A9	O	Address bit for PP-RAM/SD-RAM	89	RXD0	I/O	Not used
26	A6	O	Address bit for PP-RAM/SD-RAM	90	P3.12	O	Not used
27	A5	O	Address bit for PP-RAM/SD-RAM	91	P3.13	O	Not used
28	A10	O	Address bit for PP-RAM/SD-RAM	92	P3.15	O	Not used
29	A11	O	Address bit for PP-RAM/SD-RAM	93	P5.14	I	RGB input of EXT-2 active
30	A12	O	Address bit for PP-RAM/SD-RAM	94	P5.15	I	Headphone connection detection (Connect: H)
31	VSS33	--	GND	95	TRIG_IN	--	Not used
32	VDD33	i	3.3V	96	TRIG_OUT	--	Not used
33	A4	O	Address bit for PP-RAM/SD-RAM	97	P6.2	O	Notifies bus free state (Stop mode: H)
34	A3	O	Address bit for PP-RAM/SD-RAM	98	P6.3	O	Clock for inter IC control bus
35	A2	O	Address bit for PP-RAM/SD-RAM	99	P6.4	I/O	Data for inter IC control bus
36	A1	O	Address bit for PP-RAM/SD-RAM	100	P6.5	O	MSP reset (Reset: H)
37	A0	O	Address bit for PP-RAM/SD-RAM	101	P6.6	--	Not used
38	A13	O	Address bit for PP-RAM/SD-RAM	102	VSYNC	I	Vertical sync
39	A14/RAS	O	Row address strobe for SD-RAM access	103	HSYNC	I	Horizontal sync
40	A15/CAS	O	Column address strobe for SD-RAM access	104	COR/RSTOUT	O	Output for contrast reduction
41	VSS33	--	GND	105	BLANK/CORBLA	O	Ys for OSD Teletext (blanking)
42	VDD33	I	3.3V	106	VDD33	I	3.3V
43	MEMCLK	O	Clock for SD-RAM	107	VSS33	--	GND
44	CSSDRAM	O	Chip select signal for SD-RAM device	108	XTAL1	I	System clock (4MHz)
45	CLKEN	O	Enable for memory clock	109	XTAL2	O	System clock (4MHz)
46	CSROM	O	Chip select signal for PP-ROM device	110	VSSA	--	GND
47	RD	O	External memory read strobe for PP-ROM	111	VDDA	I	2.5V
48	UDQM	O	Write disable for high byte	112	R	O	Red for OSD / Teletext
49	LDQM	O	Write disable for low byte	113	G	O	Green for OSD / Teletext
50	WR	O	Memory write strobe	114	B	O	Blue for OSD / Teletext
51	D15	I/O	Data bit for PP-RAM/SD-RAM	115	VSSA	--	GND
52	VSS33	--	GND	116	VDDA	--	2.5V
53	VDD33	I	3.3V	117	CVBS2	I	Composite video for WSS
54	D7	I/O	Data bit for PP-RAM/SD-RAM	118	VSSA	--	GND
55	D0	I/O	Data bit for PP-RAM/SD-RAM	119	VDDA	I	2.5V
56	D14	I/O	Data bit for PP-RAM/SD-RAM	120	CVBS1B	I	Ground for CVBS1A
57	D8	I/O	Data bit for PP-RAM/SD-RAM	121	CVBS1A	I	Composite video for Teletext decorder
58	D6	I/O	Data bit for PP-RAM/SD-RAM	122	VSSA	--	GND
59	D1	I/O	Data bit for PP-RAM/SD-RAM	123	VDDA	I	2.5V
60	VSS33	--	GND	124	P5.0	I	AFT voltage for tuner
61	VDD33	I	3.3V	125	P5.1	--	Not used
62	D13	I/O	Data bit for PP-RAM/SD-RAM	126	P5.2	I	AGC voltage for tuner
63	D9	I/O	Data bit for PP-RAM/SD-RAM	127	P5.3	--	Not used
64	D5	I/O	Data bit for PP-RAM/SD-RAM	128	TMODE	I	Test mode

SECTION 3
DISASSEMBLY

3.1 DISASSEMBLY PROCEDURE

3.1.1 REMOVING THE REAR COVER

(1) Unplug the power cord.
(2) Remove the 16 screws **[A]**.
(3) Withdraw the REAR COVER toward you.

3.1.2 REMOVING THE AV TERMINAL BOARD

• Remove the REAR COVER.
(1) Remove the 5 screws **[B]**.
(2) Withdraw the AV TERMINAL BOARD toward you.

3.1.3 REMOVING THE CHASSIS

• Remove the REAR COVER.
(1) Slightly raise the both sides of the CHASSIS by hand and remove the 2 claws under the both sides of the CHASSIS from the front cabinet.
(2) Withdraw the CHASSIS backward.
(If necessary, take off the wire clamp, connectors etc.)

3.1.4 REMOVING THE SPEAKER

• Remove the REAR COVER.
(1) Remove the 2 screws **[C]**, then remove the SUPPORT BRACKET.
(2) Remove the 4 screws **[D]**, then remove the speaker.
(3) Follow the same steps when removing the other SPEAKER.

3.1.5 CHECKING THE PW BOARD

• To check the back side of the PW Board.
(1) Pull out the CHASSIS. (Refer to REMOVING THE CHASSIS).
(2) Remove the CONTROL BASE.
(3) Front side is turned down and a chassis is stood perpendicularly. The check by the side of the solder side of MAIN PWB and POWER&DEF PWB is possible.

CAUTION:

- When erecting the CHASSIS, be careful so that there will be no contacting with other PW Board.
- Before turning on power, make sure that the wire connector is properly connected.
- When conducting a check with power supplied, be sure to confirm that the CRT EARTH WIRE (BRAIDED ASS'Y) is connected to the CRT SOCKET PW board.

3.1.6 WIRE CLAMPING AND CABLE TYING

(1) Be sure to clamp the wire.
(2) Never remove the cable tie used for tying the wires together.
Should it be inadvertently removed, be sue to tie the wires with a new cable tie.

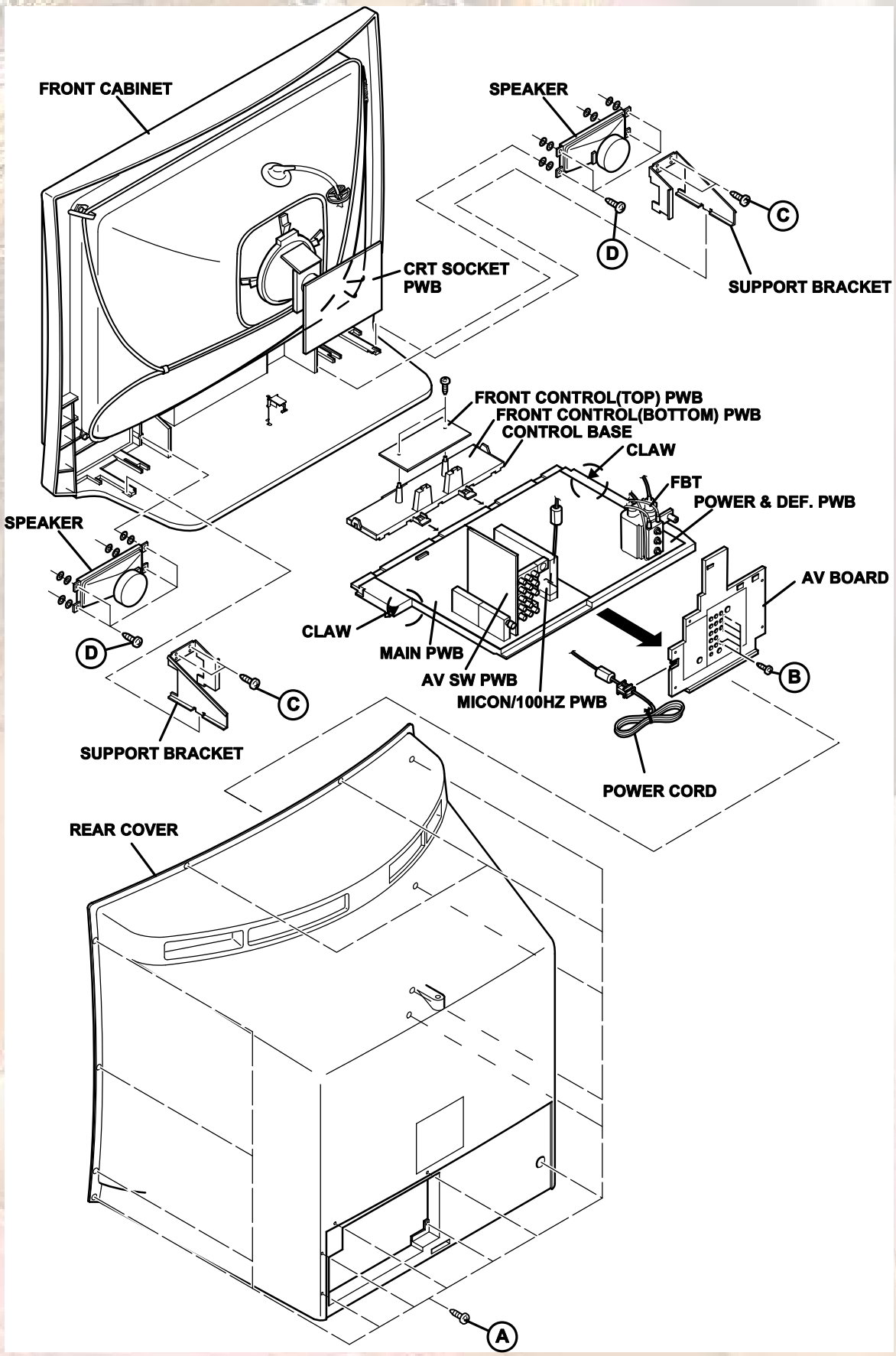

FRONT CABINET
SPEAKER
CRT SOCKET PWB
C
D
SUPPORT BRACKET
FRONT CONTROL(TOP) PWB
FRONT CONTROL(BOTTOM) PWB
CONTROL BASE
CLAW
FBT
POWER & DEF. PWB
SPEAKER
AV BOARD
CLAW
MAIN PWB
AV SW PWB
MICON/100HZ PWB
B
D
C
SUPPORT BRACKET
POWER CORD
REAR COVER
A

Fig.1

3.2 MEMORY IC REPLACEMENT

- This model uses the memory IC.
- This memory IC stores data for proper operation of the video and drive circuits.
- When replacing, be sure to use an IC containing this (initial value) data.

3.2.1 MEMORY IC REPLACEMENT PROCEDURE

1. Power off
Switch off the power and disconnect the power plug from the AC outlet.

2. Replace the memory IC
Be sure to use the memory IC written with the initial setting values.

3. Power on
Connect the power plug to the AC outlet and switch on the power.

4. System constant check and setting
* It must not adjust without signal.
(1) Press the [DISPLAY] key and the [PICTURE MODE] key of the REMOTE CONTROL UNIT simultaneously.
(2) The SERVICE MODE screen of Fig. 1 will be displayed.
(3) While the SERVICE MODE is displayed, press the [DISPLAY] key and the [PICTURE MODE] key simultaneously, and the SYSTEM CONSTANT SET screen of Fig. 2 will be displayed.
(4) Check the setting values of the SYSTEM CONSTANT SET. If the value is different, select the setting item with the [MENU ▲/▼] key, and set the correct value with the [MENU ◀/▶] key.
(5) Press the [OK] key to memorize the setting value.
(6) Press the [INFORMATION] key twice, and return to the normal screen.

5. Receiving channel setting
Refer to the OPERATING INSTRUCTIONS and set the receive channels (Channels Preset) as described.

6. User settings
Check the user setting items according to the given in page later.
Where these do not agree, refer to the OPERATING INSTRUCTIONS and set the items as described.

7. SERVICE MODE setting
Verify what to set in the SERVICE MODE, and set whatever is necessary (Fig.1).
Refer to the SERVICE ADJUSTMENT for setting.

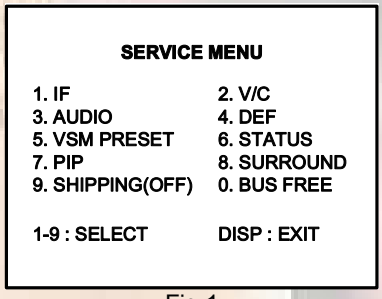


Fig.1

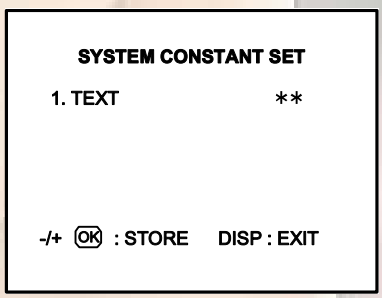


Fig.2

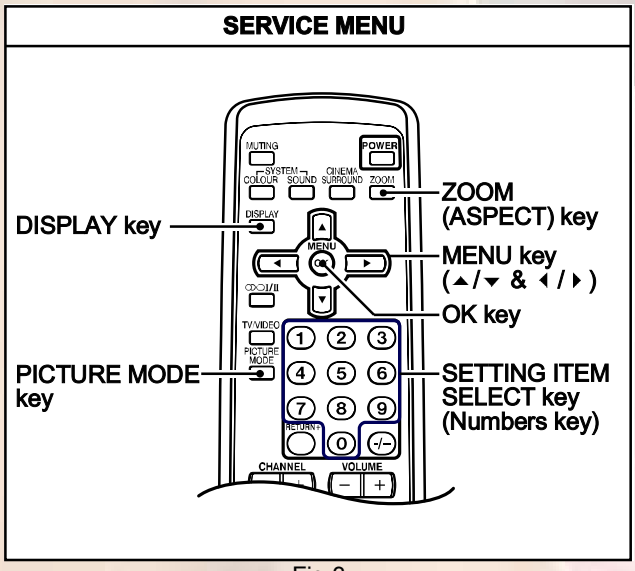


Fig.3

3.2.2 SYSTEM CONSTANT SETTING

Setting item	Setting value	
	HV-29JH24	HV-29JH74/G
1. TEXT	YES	YES
2. PIP	NO	YES
3. COLOUR AUTO	NO	YES
4. BLUE BACK MUTE	NO	NO
5. TUNER	MA1	MA1

3.2.3 SETTINGS OF FACTORY SHIPMENT

3.2.3.1 BUTTON OPERATION

Setting item	Setting position
POWER	Off
CHANNEL	PR 1
VOLUME	10
TV/VIDEO	TV

3.2.3.2 REMOTE CONTROL DIRECT OPERATION

Setting item	Setting position
CHANNEL	PR1
VOLUME	10
ZOOM	REGULAR
TV/VIDEO	TV
SLEEP TIMER	OFF
DISPLAY	Indicated

3.2.3.3 REMOTE CONTROL MENU OPERATION

(1) PICTURE SETTING

Setting item	Setting position
PICTURE MODE	BRIGHT
CONTRAST / BRIGHT / SHARP / COLOUR / HUE	CENTRE
WHITE BALANCE	MID

(2) PICTURE FEATURES

Setting item		Setting position
DIGITAL VNR		AUTO
DIGIPURE		AUTO
PULL DOWN		AUTO
COLOUR SYSTEM	TV	Depend on the preset channel
	VIDEO	AUTO
ZOOM		REGULAR
PICTURE TILT		CENTRE
FAVORITE CH CHANNEL		
FAVORITE CHANNEL		COLOUR
PR01		RED
PR02		GREEN
PR03		YELLOW
PR04		BLUE
PICTURE MODE		BRIGHT
DIGITAL VNR		AUTO
WHITE BALANCE		MID
DIGIPURE		AUTO
PICTURE EFFECT		ON
VIDEO SETTING		
VIDEO STATUS		VIDEO-1, 2, 3, 4
PICTURE MODE		BRIGHT
DIGITAL VNR		AUTO
WHITE BALANCE		MID
DIGIPURE		AUTO
PICTURE EFFECT		OFF

(3) SOUND SETTING

Setting item	Setting position
STEREO / I•II	STEREO SOUND
BASS	CENTRE
TREBLE	CENTRE
BALANCE	CENTRE
AI VOLUME	ON
CINEMA SURROUND	OFF

(4) FEATURES

Setting item	Setting position
SLEEP TIMER	OFF
BLUE BACK	ON
CHILD LOCK	OFF
CAHNNEL GUARD	ID NO.0000, All CH off
AUTO SHUTOFF	OFF
VIDEO-3 SETTING	COMPONENT
PIP / TWIN **[HV-29JH74/G]**	OFF
SUB INPUT **[HV-29JH74/G]**	VIDEO-1
PIP POSITION **[HV-29JH74/G]**	LOWER LEFT POSITION

(5) INSTALL

Setting item	Setting position
LANGUAGE	ENGLISH
AUTO PROGRAM	TV channel automatically set
EDIT/MANUAL	PRESET CH only
TELETEXT LANGUAGE	GROUP-1 **[HV-29JH74]** GROUP-4 **[HV-29JH74/G]**

3.2.4 SERVICE MODE SETTING ITEMS

Setting item	Setting value
1. IF	1. VCO
2. V / C	1. RGB BLK 2. CUTOFF R 3. CUTOFF G 4. CUTOFF B 5. WDR R 6. WDR G 7. WDR B 8. BRIGHT 9. CONT 10. COLOUR 11. HUE 12. SHARP 13. SC ADJ. 14. TOP BLK 15. BTM BLK 16. YUV BRIGHT 17. YUV CONT 18. YUV COLU 19. YUV COLV 20. YUV YDEL 21. YUV UVDEL 22. YCDELM
3. AUDIO	1. ERR LIMIT 2. A2 ID THR 3. SYSTEM 4. SUB BASS 5. SUB TREBLE
4. DEF	1. V-SHIFT 2. V-SIZE 3. H-CENT 4. H-SIZE 5. TRAPEZ 6. EW-PIN 7. COR-UP 8. COR-LO 9. COR-UP-S 10. COR-LO-S 11. ANGLE 12. BOW 13. V-S.CR 14. V-LIN

Setting item		Setting value
5. VSM PRESET	BRIGHT SOFT STANDARD	1. CONT 2. BRIGHT 3. SHARP 4. COLOUR 5. TINT
	COOL WARM NORMAL	6. WDR R 7. WDR G 8. WDR B **[Do not adjust]**
6. STATUS **[Do not adjust]**		1. SOFT 2. EEP MEMORY
7. PIP		1. HUE 2. SC ADJ 3. PIP HORPOS 4. PIP VERPOS 5. YCDELS
8. SURROUND		1. CH CONFIG 2. MATRIX 3. REPRODUCT 4. CENTER MODE 5. SPATIAL EFF 6. VIRTUAL EFF 7. BASS EFFECT 8. HARM 9. HPF 10. LPF 11. AMP LIMIT 12. LEVEL ADJ 13. SWC 14. SW HPF 15. VOLUME 16. HYPER EFF 17. EFFECT MOD 18. HP GAIN

3.3 REPLACEMENT OF CHIP COMPONENT

3.3.1 CAUTIONS

(1) Avoid heating for more than 3 seconds.
(2) Do not rub the electrodes and the resist parts of the pattern.
(3) When removing a chip part, melt the solder adequately.
(4) Do not reuse a chip part after removing it.

3.3.2 SOLDERING IRON

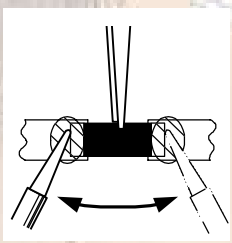
(1) Use a high insulation soldering iron with a thin pointed end of it.
(2) A 30w soldering iron is recommended for easily removing parts.

3.3.3 REPLACEMENT STEPS

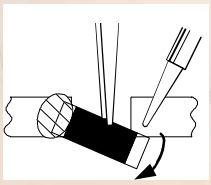
1. How to remove Chip parts

[Resistors, capacitors, etc.]

(1) As shown in the figure, push the part with tweezers and alternately melt the solder at each end.

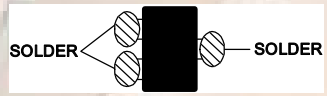


(2) Shift with the tweezers and remove the chip part.

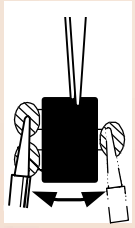


[Transistors, diodes, variable resistors, etc.]

(1) Apply extra solder to each lead.



(2) As shown in the figure, push the part with tweezers and alternately melt the solder at each lead. Shift and remove the chip part.

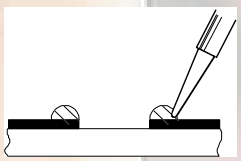


NOTE :
After removing the part, remove remaining solder from the pattern.

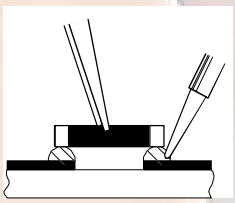
2. How to install Chip parts

[Resistors, capacitors, etc.]

(1) Apply solder to the pattern as indicated in the figure.

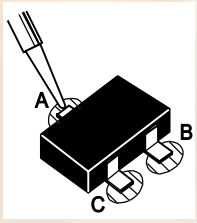


(2) Grasp the chip part with tweezers and place it on the solder. Then heat and melt the solder at both ends of the chip part.

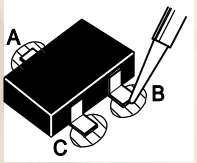


[Transistors, diodes, variable resistors, etc.]

(1) Apply solder to the pattern as indicated in the figure.
(2) Grasp the chip part with tweezers and place it on the solder.
(3) First solder lead **A** as indicated in the figure.



(4) Then solder leads **B** and **C**.



SECTION 4
ADJUSTMENT

4.1 ADJUSTMENT PREPARATION

(1) **There are 2 ways of adjusting this TV : One is with the REMOTE CONTROL UNIT and the other is the conventional method using adjustment parts and components.**
(2) **The adjustment using the REMOTE CONTROL UNIT is made on the basis of the initial setting values. The setting values which adjust the screen to the optimum condition can be different from the initial setting values.**
(3) Make sure that connection is correctly made AC to AC power source.
(4) Turn on the power of the TV and measuring instruments for warning up for at least 30 minutes before starting adjustments.
(5) If the receive or input signal is not specified, use the most appropriate signal for adjustment.
(6) Never touch the parts (such as variable resistors, transformers and condensers) not shown in the adjustment items of this service adjustment.

4.2 PRESET SETTING BEFORE ADJUSTMENT

Unless otherwise specified in the adjustment items, preset the following functions with the REMOTE CONTROL UNIT.

Item	Preset value
PICTURE MODE	BRIGHT
CONTRAST / BRIGHT / SHARP / COLOUR / HUE	CENTRE
WHITE BALANCE	STANDARD
DIGITAL VNR	AUTO
DIGIPURE	AUTO
PULL DOWN	AUTO
BASS / TREBLE / BALANCE	CENTRE
CINEMA SURROUND	OFF
ZOOM	REGULAR
PICTURE TILT	CENTRE

4.3 MEASURING INSTRUMENT AND FIXTURES

(1) DC voltmeter (or digital voltmeter)
(2) Oscilloscope
(3) Signal generator
(Pattern generator : PAL / SECAM / NTSC)
(4) Remote control unit

4.4 ADJUSTMENT ITEMS

■ **CHECK ITEMS**
- B1 POWER SUPPLY check
- HIGH VOLTAGE check
- IF VCO check

■ **FOCUS**
- FOCUS adjustment

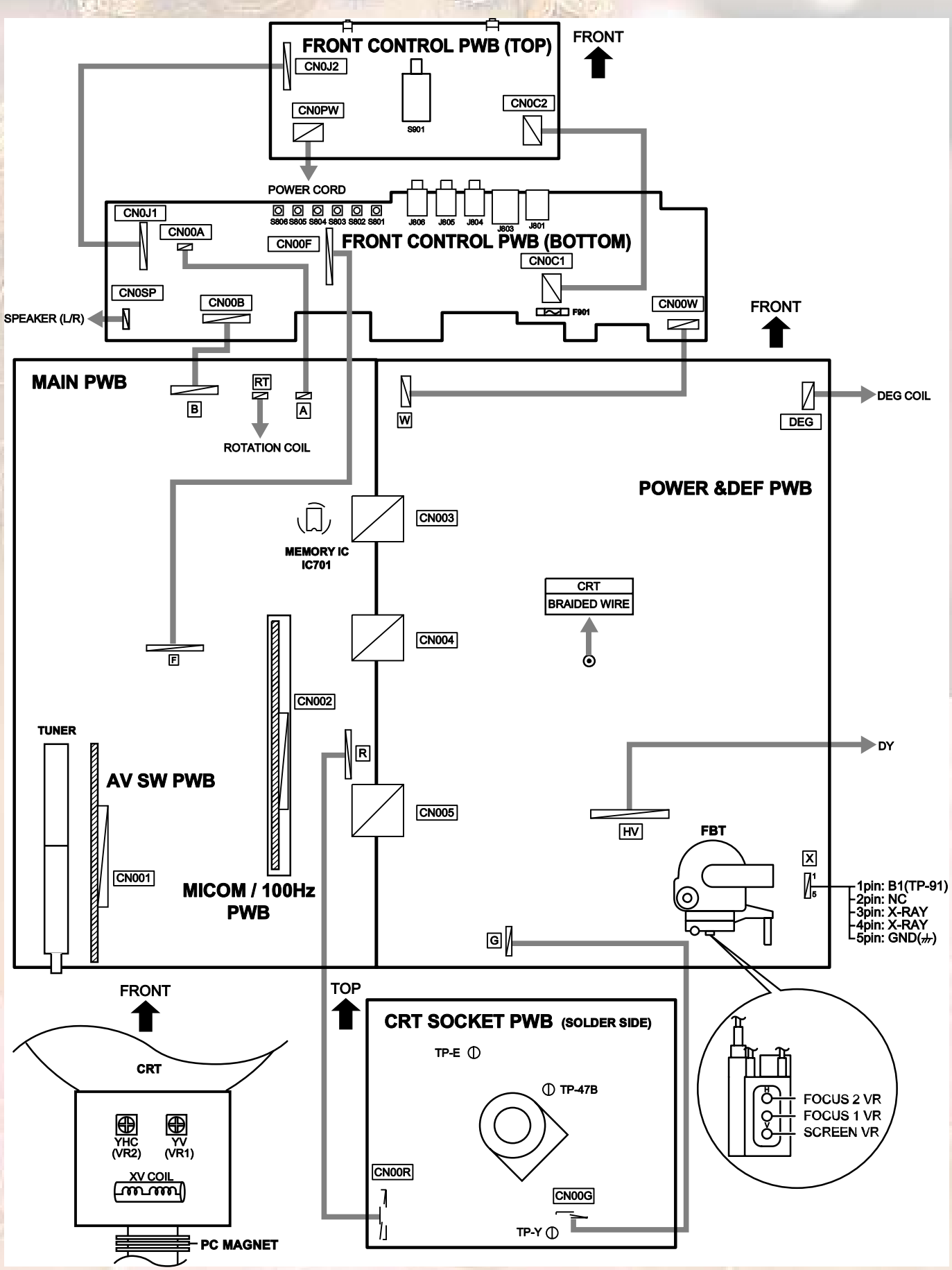
■ **DEFLECTION CIRCUIT**
- V. POSITION adjustment
- V. SIZE adjustment
- H. POSITION adjustment
- H. SIZE adjustment
- SIDE-PIN adjustment
- TRAPEZIUM adjustment
- UPPER / LOWER CORNER PIN adjustment
- PARALLEL(TILT) adjustment
- BOW adjustment
- V. S-SHAPE CORRECTION & LINEARITY adjustment

■ **VIDEO CIRCUIT**
- WHITE BALANCE adjustment
- SUB BRIGHT adjustment
- SUB CONTRAST adjustment
- SUB COLOUR adjustment
- SUB HUE adjustment
- COLOUR DECODER VCO adjustment

■ **VSM PRESET SETTING**
- VSM PRESET

■ **PIP SETTING**
- PIP POSITION adjustment

4.5 ADJUSTMENT LOCATION



4.6 BASIC OPERATION OF SERVICE MODE

4.6.1 TOOL OF SERVICE MODE OPERATION

Operate the SERVICE MODE with the REMOTE CONTROL UNIT.

4.6.2 SERVICE MODE ITEMS

With the SERVICE MODE, various adjustments can be made, and they are broadly classified in the following items of settings.

1.IF	This mode adjusts the setting values of the IF circuit.
2. V/C	This mode adjusts the setting values of the VIDEO circuit.
3.AUDIO	This mode adjusts the setting values of the multiplicity AUDIO circuit.
4. DEF	This mode adjusts the setting values of the DEFLECTION circuit for each aspect mode given below.
5.VSM PRESET	This mode adjusts the initial setting values of BRIGHT, STANDARD and SOFT. (VSM : Video Status Memory)
6.STATUS	It is no requirement to adjustment. **[Do not adjust]**
7.PIP	This mode adjusts the setting values of the PIP circuit. **[HV-29JH74/G only]**
8.SURROUND	This mode adjusts the setting values of the SURROUND circuit.
9.SHIPPING	This mode is set at shipping setting. **[Do no adjust]**
0.BUS FREE	It is not requirement to adjustment. **[Do no adjust]**

4.6.3 BASIC OPERATION IN SERVICE MODE

4.6.3.1 HOW TO ENTER THE SERVICE MODE

(1) Press the [DISPLAY] key and the [PICTURE MODE] key simultaneously, then enter the SERVICE MODE.
(2) When the main menu is displayed, press any key of the [0] to [9] key to enter the corresponding sub menu mode.

SERVICE MENU

1. IF	2. V/C
3. AUDIO	4. DEF
5. VSM PRESET	6. STATUS
7. PIP	8. SURROUND
9. SHIPPING(OFF)	0. BUS FREE
1-9 : SELECT	DISP : EXIT

Fig.1

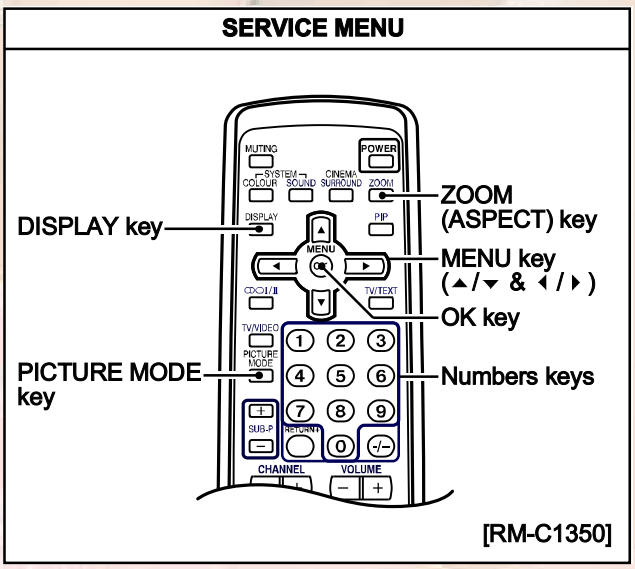


Fig.2

4.6.3.2 SETTING METHOD

■ **1.IF**

[1. VCO] : It must not adjust without signal

(1) [1] key
Select 1.IF.
(2) [1] key
Select 1.VCO(CW).
Check the arrow position between the ABOVE REF. and BELOW REF.
(3) [DISPLAY] key
Return to the SERVICE MODE main manu screen.

■ **2. V/C, 4. DEF**

(1) [2], [4] key
Select one from 2. V/C, 4. DEF.
(2) [MENU ▲/▼] key
Select setting items.
(3) [MENU ◀/▶] key
Set the setting values of the setting items.

■ **5.VSM PRESET**

(1) [5]key
Select 5.VSM PRESET.
(2) [OK] key
Select setting items.
(3) [MENU ▲/▼] key
Set the setting values of the setting items.

4.6.3.3 MEMORIZE THE ADJUSTMENT DATA

When adjustment is completed, press the [OK] key to memorize the adjustment value. If not to do it, adjustment data is not memorized to the memory IC. And if exit the adjustment mode before memorize the data, the adjustment value which you change is canceled.

4.6.3.4 RELEASE OF SERVICE MODE

After completing the setting, return to the SERVICE MODE, then again press the [DISPLAY] key.

4.6.4 SERVICE MODE FLOW CHART

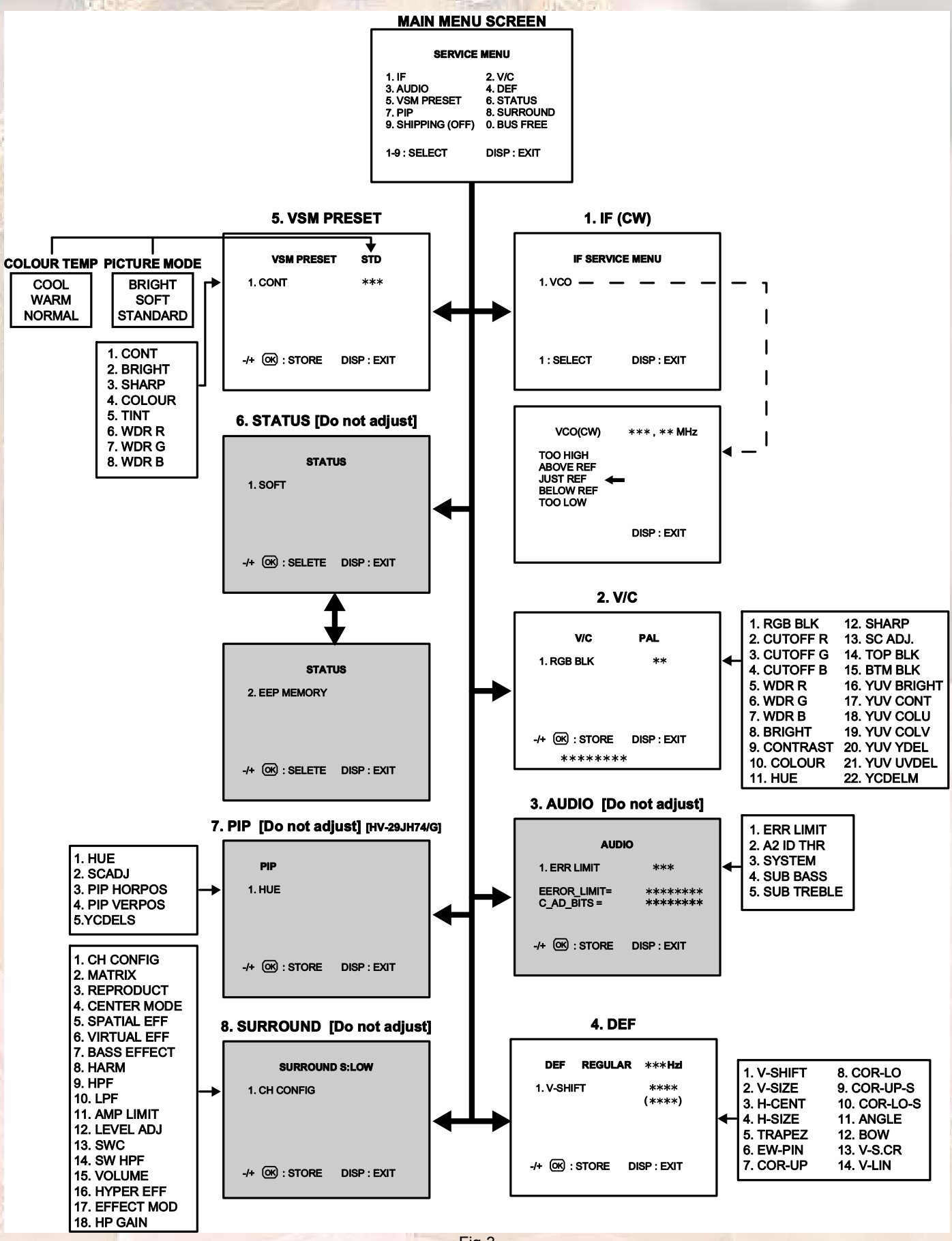


Fig.3

4.7 INITIAL SETTING VALUE OF SERVICE MODE

(1) Adjustment of the SERVICE MODE is made on the basis of the initial setting values:however, the new setting values which set the screen in its optimum condition may differ from the initial setting value.
(2) Do not change the initial setting values of the setting items not listed in "ADJUSTMENT PROCEDURE".
(3) " --- " is impossible to adjustment.

[2. V/C] * is variable values for adjustment.

Setting item		Variable range	Setting value							
			RF / Composite Video / S-Video				Component video		Progressive	
			PAL	SECAM	NTSC 3.58	NTSC 4.43	50Hz-i	60Hz-i	50Hz-p	60Hz-p
1. RGB BLK		---	---	---	---	---	---	---	---	---
2. CUTOFF R		0 to 255	150*	150*	150*	150*	5	5	0	0
3. CUTOFF G		0 to 255	150*	150*	150*	150*	-8	-8	0	0
4. CUTOFF B		0 to 255	150	150	150	150	0	0	0	0
5. WDR R		0 to 255	150*	150*	150*	150*	0	0	0	0
6. WDR G		0 to 255	150*	150*	150*	150*	0	0	0	0
7. WDR B		0 to 255	150	150	150	150	0	0	0	0
8. BRIGHT	RF	-128 to 127	-25*	-25*	-25*	-25*	---	---	---	---
	VIDEO	-128 to 127	+6	+6	+6	+6	+2	+2	-4	-4
9. CONTRAST	RF	0 to 63	50*	50*	50*	50*	---	---	---	---
	VIDEO	0 to 63	+15	+15	+15	+15	---	---	---	---
10. COLOUR	RF	0 to 63	36*	55*	25*	5	---	---	---	---
	VIDEO	0 to 63	-7	-3	-3	0	-14	-5	-10	+5
11. HUE	RF	-64 to 63	---	---	4	0	---	---	---	---
	VIDEO	-64 to 63	---	---	0	0	---	---	---	---
12. SHARP	RF	-15 to 15	-3	-3	-3	-3	---	---	---	---
	VIDEO	-15 to 15	0	0	0	0	0	0	0	0
13. SC ADJ		0 to 63	18*	18*	18*	18*	---	---	---	---
14. TOP BLK		0 to 255	35	35	46	46	35	46	51	46
15. BTM BLK		-127 to 511	-15	-15	-37	-37	-15	-37	-50	-37
16. YUV BRIGHT		-64 to 63	---	---	---	---	-4	-4	-4	-4
17. YUV CONT		0 to 63	---	---	---	---	55	55	55	55
18. YUV COLU		0 to 63	---	---	---	---	57	60	0	-10
19. YUV COLV		0 to 63	---	---	---	---	60	55	0	0
20. YUV YDEL		0 to 127	---	---	---	---	50	50	30	35
21. YUV UVDEL		0 to 127	---	---	---	---	49	49	30	35
22. TCDELM	RF	0 to 127	2	0	0	0	---	---	---	---
	VIDEO	0 to 127	0	0	0	0	---	---	---	---
	S-VIDEO	0 to 127	1	0	1	1	---	---	---	---

Setting item		Variable range	Setting value							
			Compress (16:9)							
			RF/ Composite Video / S-Video				Component video		Progressive	
			PAL	SECAM	NTSC 3.58	NTSC 4.43	50Hz-i	60Hz-i	50Hz-p	60Hz-p
8. BRIGHT	RF	-128 to 127	0	0	0	0	0	0	0	0
	VIDEO	-128 to 127	0	0	0	0	0	0	0	0
9. CONTRAST	RF	0 to 63	-7	-7	-7	-7	---	---	---	---
	VIDEO	0 to 63	-7	-7	-7	-7	---	---	---	---
10. COLOUR	RF	0 to 63	0	0	0	0	---	---	---	---
	VIDEO	0 to 63	0	0	0	0	0	0	0	0

[3. AUDIO]

Setting item	Variable range	Setting value
1. ERR LIMIT	0000 to 00FF	0010
2. A2 ID THR	0000 to 00FF	0019
3. SYSTEM	---	---
4. SUB BASS	-003 to 0003	0001
5. SUB TREBLE	-003 to 0003	0001

[4. DEFLECTION]

Setting item	Variable range	Setting value											
		REGULAR				ZOOM				16 : 9			
		100Hz-i	60Hz-p	120Hz-i	50Hz-p	100Hz-i	60Hz-p	120Hz-i	50Hz-p	100Hz-i	60Hz-p	120Hz-i	50Hz-p
1. V-SHIFT	-32 to +31	1	-2	3	-2	0	0	0	0	0	0	0	0
2. V-SIZE	-64 to +63	-7	-1	-1	0	0	0	0	0	-27	0	0	-9
3. H-CENT	-128 to +127	-16	-1	0	-3	-2	0	0	0	0	0	0	0
4. H-SIZE	-128 to +127	8	-2	0	-2	0	0	0	0	0	0	0	0
5. TRAPEZ	-63 to +64	-4	0	0	0	0	0	0	0	2	0	0	-2
6. EW-PIN	-128 to +127	-18	0	0	0	0	0	0	0	0	0	0	5
7. COR-UP	-64 to +64	2	0	0	0	0	0	0	0	2	0	1	-8
8. COR-LO	-64 to +64	3	0	0	0	0	0	0	0	2	0	0	0
9. COR-UP-S	-64 to +64	1	0	0	0	0	0	0	0	2	0	0	2
10. COR-LO-S	-64 to +64	1	0	0	0	0	0	0	0	2	0	0	0
11. ANGLE	-128 to +127	2	0	0	0	0	0	0	0	0	0	0	0
12. BOW	-128 to +127	1	0	0	0	0	0	0	0	0	0	0	0
13. V-S.CR	-64 to +63	18	0	0	0	0	0	0	0	0	0	0	0
14. V-LIN	-64 to +63	-2	0	0	-2	0	0	0	0	0	0	0	0

[5. VSM PRESET]

Setting item	Variable range	Setting value					
		BRIGHT	SOFT	STANDARD	COOL	WARM	NORMAL
1. CONT	-16 to 16	16	-2	0	---	---	---
2. BRIGHT	-16 to 16	-2	-2	0	---	---	---
3. SHARP	-16 to 16	0	-10	0	---	---	---
4. COLOUR	-16 to 16	0	-2	0	---	---	---
5. TINT	-16 to 16	0	0	0	---	---	---
6. WDR R	-16 to 16	---	---	---	-12	22	0
7. WDR G	-16 to 16	---	---	---	-11	2	0
8. WDR B	-16 to 16	---	---	---	0	0	0

[7. PIP] [HV-29JH74/G]

Setting item		Variable range	Initial setting value							
			RF / Composite Video / S-Video				Component video		Progressive	
			PAL	SECAM	NTSC 3.58	NTSC 4.43	50Hz-i	60Hz-i	50Hz-p	60Hz-p
1. HUE	RF	-128 to 0126	---	---	+4	-1	---	---	---	---
	VIDEO	-128 to 0126	---	---	-1	-1	---	---	---	---
2. SC ADJ		0000 to 0063	17	17	17	17	17	17	17	17

Setting item (Position display)	Variable range	Initial setting value			
		PAL / SECAM / Component 50Hz-i		NTSC3.58 / NTSC4.43 / Component 50Hz-p / 60Hz-i / 60Hz-p	
		PIP position		PIP position	
		Upper left	Lower right	Upper left	Lower right
3. PIP HOR POS	0000 to 2047	222	585	217	585
4. PIP VER POS	0000 to 1023	47	198	32	159

Setting item		Variable range	Initial setting value							
			Regular							
			RF / Composite Video / S-Video				Component video		Progressive	
			PAL	SECAM	NTSC 3.58	NTSC 4.43	50Hz-i	60Hz-i	60Hz-p	60Hz-p
5. YCDELS	RF	-016 to 0015	-1	-1	-1	-1	---	---	---	---
	VIDEO	-016 to 0015	-1	-1	-1	-1	---	---	---	---
	S-VIDEO	-016 to 0015	-1	-1	-1	-1	---	---	---	---

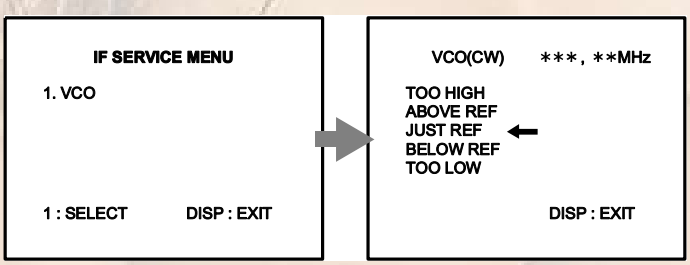
[8. SURROND]

Setting item	Variable range	Initial setting value	
		LOW	HIGH
1. CH CONFIG	0000 to 0001	1	1
2. MATRIX	0000 to 0127	16	16
3. REPRODUCT	0000 to 0015	6	6
4. CENTER MODE	0000 to 0015	3	3
5. SPATIAL EFF	0000 to 0127	40	50
6. VIRTUAL EFF	0000 to 0127	35	47
7. BASS EFFECT	0000 to 0127	46	52
8. HARM	0000 to 0127	0	0
9. HPF	0002 to 0030	8	8
10. LPF	0005 to 0030	18	15
11. AMP LIMIT	-032 to 0000	-10	-15
12. LEVEL ADJ	-128 to 0012	0	0
13. SWC	0005 to 0040	28	28
14. SW HPF	0000 to 0002	2	2
15. VOLUME	0000 to 0003	3	3
16. HYPER EFF	0000 to 0127	63	63
17. EFFECT MOD	0000 to 0002	0	0
18. HP GAIN	0000 to 0008	8	8

4.8 ADJUSTMENT PROCEDURE

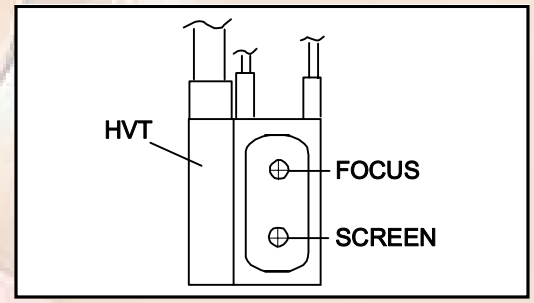
4.8.1 CHECK ITEM

Item	Measuring instrument	Test point	Adjustment part	Description
B1 VOLTAGE	DC voltmeter Remote control unit	X connector 1-pin:TP-E 5-pin:TP-91 [POWER DEF PWB]	[2. V/C] 1. RGB BLK	(1) Receive a any broadcast. (2) Select 2. V/C from the SERVICE MODE. (3) Select < 1.RGB BLK >. (4) Press the [[MENU ◂ / ▸] key to find the cut off screen (Black screen). (5) Connect a DC voltmeter to TP-91(B1) and TP-E. (6) Make sure that the voltage is DC139.9 ±2.0V.
HIGH VOLTAGE	HV voltmeter Remote control unit	CRT anode Chassis GND	[2. V/C] 1. RGB BLK	(1) Receive a any broadcast. (2) Select 2. V/C from the SERVICE MODE. (3) Select < 1. RGB BLK >. (4) Press the [MENU ◂ / ▸] key to find the cut off screen (Black screen). (5) Connect a HV voltmeter to CRT anode and chassis GND. (6) Make sure that the voltage is DC31.5kV(+1kV, -1.5kV). **NOTE:** • Remove the probe before removing the earth clip.
IF VCO	Remote control unit		[1.IF] 1.VCO	• Under normal conditions, no adjustment is required. • Confirmation adjustment. (1) Select 1.IF from the SERVICE MODE. (2) Select < 1.VCO > (3) Receive a any broadcast. (4) Check the ←(Arrow) posspition between the ABOVE REF. and BELLOW REF.



4.8.2 FOCUS

Item	Measuring instrument	Test point	Adjustment part	Description
FOCUS	Signal generator		FOCUS1 VR FOCUS2 VR [In HVT]	(1) Receive the cross hatch signal. (2) Set the ZOOM mode to REGULAR. (3) While looking at the screen, adjust the FOCUS VR to the vertical and horizontal lines will be clear and infine detail. (4) Make sure that the picture is in focus even when the screen gets darkened.



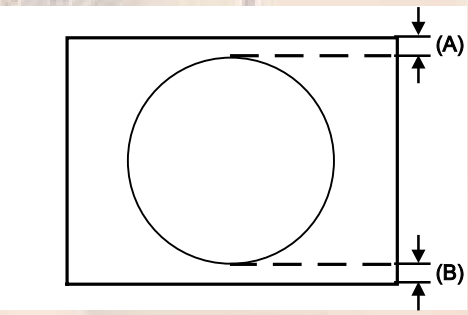
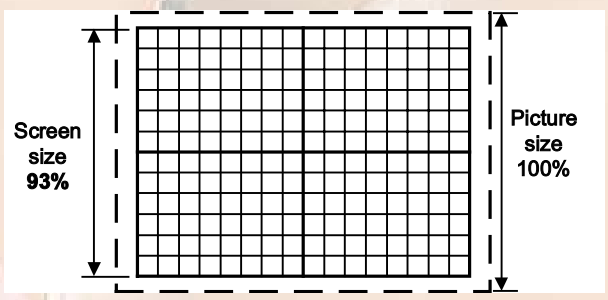
4.8.3 DEFLECTION CIRCUIT

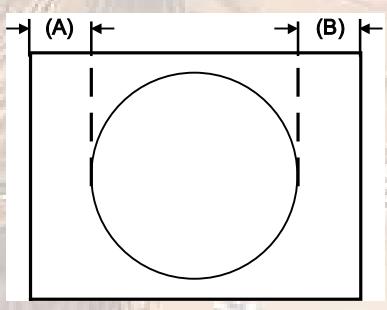
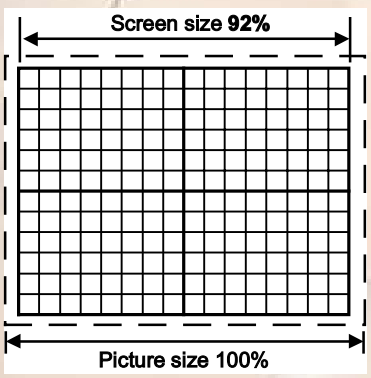
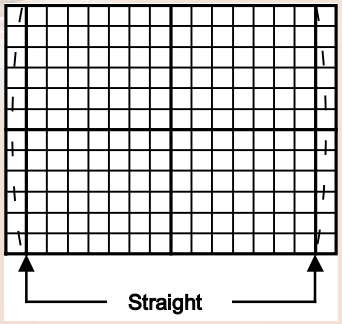
There are 3 aspect modes (1. REGULAR, 2. ZOOM, 3. 16 : 9) of the adjustment.
Depending upon the kind of signals (Vertical frequency 120Hz-i / 100Hz-i / 60Hz-p).
120Hz-i is a signal that is output to a screen when a 60Hz signal is input to a television set. It is an interlace-scanned picture of 120Hz.
100Hz-i is a signal that is output to a screen when a 50Hz signal is input to a television set. It is an interlace-scanned picture of 100Hz.

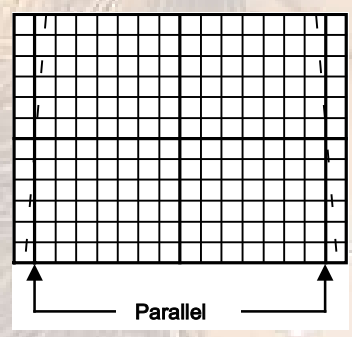
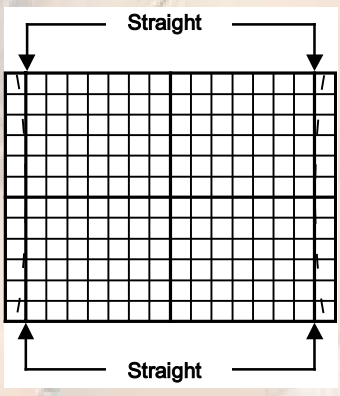
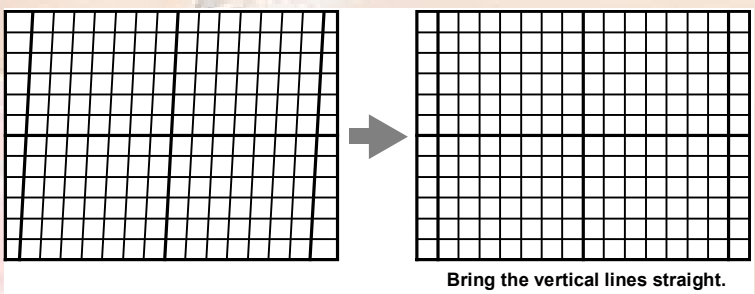
- When the 100Hz mode has been established, the setting of other modes will be done automatically. However, if the picture quality has not been optimized, adjust each mode again, respectively.
- The adjustment using the remote control unit is made on the basis of the initial setting values.
- The setting values which adjust the screen to the optimum condition can be different from the initial setting values.
- To switch aspect modes, use the [ZOOM] key of the remote controller.

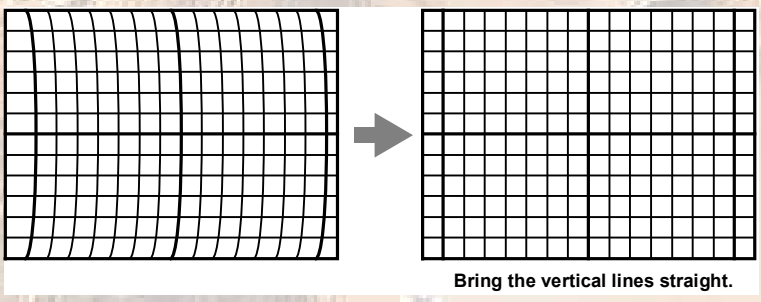
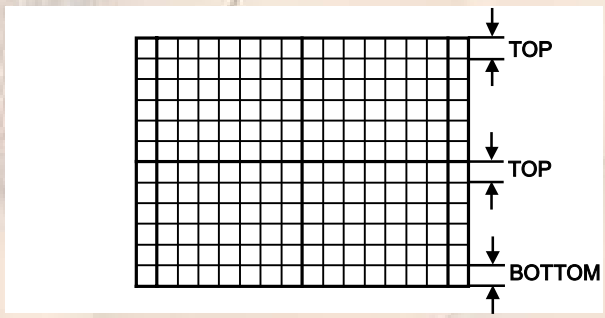
NOTE :

At first the adjustment in 100Hz mode should be done, then the data for the other aspect mode is corrected in the respective value at the same time. And confirm the deflection adjustment initial setting value in 60Hz (NTSC EXT mode) mode. If the adjustment in 100Hz each aspect mode has been done and stored, the data for the same aspect modes in 60Hz is corrected in the respective value. Only the data for the other aspect mode in 60Hz is corrected for itself.

Item	Measuring instrument	Test point	Adjustment part	Description
V. POSITION	Signal generator Remote control unit		[4. DEF] 1. V-SHIFT 14. V-LIN	(1) Receive a circle pattern signal of vertical frequency 50Hz (PAL). (2) Set the ZOOM mode to REGULAR. (3) Select 4. DEF from the SERVICE MODE. (4) Select < 1.V-SHIFT >. (5) Adjust to become A = B. (6) Check the adjustment value above in other zoom mode. If it is a wrong adjustment, re-adjust in ZOOM mode and adjust by < 1. V-SHIFT >, < 14.V-LIN >. (7) Press the [OK] key to memorize the set values.
				
V. SIZE	Signal generator Remote control unit		[4. DEF] 2.V-SIZE	(1) Receive the PAL cross hatch signal. (2) Set the ZOOM mode to REGULAR. (3) Select 4. DEF from the SERVICE MODE. (4) Select < 2.V-SIZE >. (5) Set the initial setting value of < 2.V-SIZE >. (6) Adjust to make sure that the vertical screen size of the picture size is **93%**. (7) Press the [OK] key to memorize the set values. (8) Input the NTSC VIDEO signal (60Hz) from the EXT terminal, and make sure that the vertical screen size is **93%**. (9) Press the [OK] key to memorize the set values.
				

Item	Measuring instrument	Test point	Adjustment part	Description
H. POSITION	Signal generator Remote control unit		[4. DEF] 3.H-CENT.	(1) Receive the PAL circle pattern signal. (2) Set the ZOOM mode to REGULAR. (3) Select 4. DEF from the SERVICE MODE. (4) Select < 3.H-CENT. >. (5) Set the initial setting value of < 3.H-CENT. >. (6) Adjust to became A=B. (7) Press the [OK] key to memorize the set values.
				
H. SIZE	Signal generator Remote control unit		[4. DEF] 4.H-SIZE	(1) Receive the PAL cross hatch signal. (2) Set the ZOOM mode to REGULAR. (3) Select 4. DEF from the SERVICE MODE. (4) Select < 4.H-SIZE >. (5) Set the initial setting value of < 4.H-SIZE >. (6) Adjust to make sure that the horizontal screen size of the picture size is **92%**. (7) Press the [OK] key to memorize the set value. (8) Input the NTSC VIDEO signal (60Hz) from the EXT terminal, and make sure that the horizontal screen size is **92%**. (9) Press the [OK] key to memorize the set values.
				
SIDE-PIN	Signal generator Remote control unit		[4. DEF] 6.EW-PIN	(1) Receive the PAL cross hatch signal. (2) Set the ZOOM mode to REGULAR. (3) Select 4. DEF from the SERVICE MODE. (4) Select < 6.EW-PIN >. (5) Set the initial setting value of < 6.EW-PIN >. (6) Adjust to make the vertical lines at the right and left edges of the screen become straight. (7) Press the [OK] key to memorize the set values.
				

Item	Measuring instrument	Test point	Adjustment part	Description
TRAPEZIUM	Signal generator Remote control unit		[4. DEF] 5.TRAPEZ	(1) Receive the PAL cross hatch signal. (2) Set the ZOOM mode to REGULAR. (3) Select 4. DEF from the SERVICE MODE. (4) Select < 5.TRAPEZ >. (5) Set the initial setting value of < 5.TRAPEZ >. (6) Adjust to bring the vertical lines at the right and left edges of the screen became parallel. (7) Press the [OK] key to memorize the set values.
				
UPPER/LOWER CORNER PIN	Signal generator Remote control unit		[4. DEF] 7.COR-UP 8.COR-LO 9.COR-UP-S 10.COR-LO-S	(1) Receive the PAL cross hatch signal. (2) Set the ZOOM mode to REGULAR. (3) Select 4. DEF from the SERVICE MODE. (4) Select < 8. COR-LO >. (5) Set the initial setting value of < 8. COR-LO >. (6) Adjust to bring the straight line at the lower corner. (7) Select < 7. COR-UP >. (8) Set the initial setting value of < 7. COR-UP >. (9) Adjust to bring the straight line at the upper corner. (10) Adjust < 8. COR-LO > and < 7. COR-UP > so that the vertical lines at the four corners on the screen are straight. (11) If the extreme upper & lower corners are little pin or barrel, chose < 9. COR-UP-S >, < 10. COR-LO-S > and adjust to get straight. (12) Press the [OK] key to memorize the set values.
				
PARALLEL (TILT)	Signal generator Remote control unit		[4. DEF] 11.ANGLE	(1) Receive the PAL cross hatch signal. (2) Set the ZOOM mode to REGULAR. (3) Select 4. DEF from the SERVICE MODE. (4) Select < 11. ANGLE >. (5) Adjust to bring the vertical lines straight. (6) Press the [OK] key to memorize the set values.
				

Item	Measuring instrument	Test point	Adjustment part	Description
BOW	Signal generator Remote control unit		[4. DEF] 12. BOW	(1) Receive the PAL cross hatch signal. (2) Set the ZOOM mode to REGULAR. (3) Select 4. DEF from the SERVICE MODE. (4) Select < 12.BOW >. (5) Adjust to bring the vertical lines straight. (6) Press the [OK] key to memorize the set values.
 **Bring the vertical lines straight.**				
V. S-SHAPE CORRECTION & LINEARITY	Signal generator Remote control unit		[4. DEF] 13. V-S. CR 14. V-LIN	• When the vertical linearity has been deteriorated remarkably, perform the following steps. (1) Receive the PAL cross hatch signal. (2) Set the ZOOM mode to REGULAR. (3) Select 4. DEF from the SERVICE MODE. (4) Select < 14. V-LIN >. (5) Set the initial setting value of < 14. V-LIN >. (6) Select < 13. V-S.CR >. (7) Set the initial setting value of < 13. V-S.CR >. (8) Adjust < 14. V-LIN > and < 13. V-S.CR > so that the spaces of each line on TOP, CENTER and BOTTOM become uniform. (9) Press the [OK] key to memorize the set values.
				

4.8.4 VIDEO CIRCUIT

Item	Measuring instrument	Test point	Adjustment part	Description
WHITE BALANCE	Signal generator Remote control unit		[2. V/C] 2.CUTOFF R 3.CUTOFF G 4.CUTOFF B 5.WDR R 6.WDR G	(1) Receive a black and white signal (colour off). (2) Set the ZOOM mode to REGULAR. (3) Set the PICTURE MODE to STANDARD. (4) Set the WHITE BALANCE to MID. (5) Select 2. V/C from the SERVICE MODE. (6) Select < 2.CUTOFF R >, < 3.CUTOFF G > and < 4.CUTOFF B >. (7) Adjust the screen until the black portion in the screen becomes black.(Low light) (8) Select < 5.WDR R > and < 6.WDR G >. (9) Adjust the screen until the white portion in the screen becomes white (High light). (10) Press the [OK] key to memorize the set values. (11) Change the contrast and brightness with the remote control up & down from low-light to high-light and check that the tracking of the white balance is good.
SUB BRIGHT	Remote control unit		[2. V/C] 8. BRIGHT	(1) Receive any broadcast. (2) Set the ZOOM mode to REGULAR. (3) Set the PICTURE MODE to STANDARD. (4) Set the WHITE BALANCE to MID. (5) Select 2. V/C from the SERVICE MODE. (6) Select < 8. BRIGHT >. (7) Set the initial setting value of < 8.BRIGHT >. (8) If the brightness is not the best with the initial setting value, make fine adjustment until you get the best brightness. (9) Press the [OK] key to memorize the set values.
SUB CONTRAST	Remote control unit		[2. V/C] 9. CONTRAST	(1) Receive any broadcast. (2) Set the ZOOM mode to REGULAR. (3) Set the PICTURE MODE to STANDARD. (4) Set the WHITE BALANCE to MID. (5) Select 2. V/C from the SERVICE MODE. (6) Select < 9.CONTRAST >. (7) Set the initial setting value of < 9.CONTRAST >. (8) If the contrast is not the best with the initial setting value, make fine adjustment until you get the best contrast. (9) Press the [OK] key to memorize the set values.

<table>
<tr><th>Item</th><th>Measuring instrument</th><th>Test point</th><th>Adjustment part</th><th>Description</th></tr>
<tr><td>SUB COLOUR</td><td>Signal generator

Remote control unit</td><td></td><td>[2. V/C]
10.COLOUR</td><td>[Method of adjustment without measuring instrument]
PAL COLOUR
(1) Receive the PAL broadcast.
(2) Set the ZOOM mode to REGULAR.
(3) Set the PICTURE MODE to STANDARD.
(4) Set the WHITE BALANCE to MID.
(5) Select 2. V/C from the SERVICE MODE.
(6) Select < 10.COLOUR >.
(7) Set the initial setting value of < 10.COLOUR >.
(8) If the colour is not the best with the initial set value, make fine adjustment until you get the best colour.
(9) Press the [OK] key to memorize the set values.

SECAM COLOUR :
(1) Receive the SECAM broadcast.
(2) Follow the same step 2 to 9 as in PAL COLOUR.

NTSC 3.58 COLOUR :
(1) Receive the NTSC broadcast.
(2) Follow the same step 2 to 9 as in PAL COLOUR.

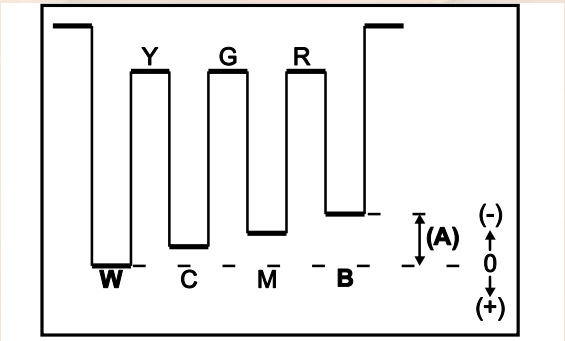
NTSC 4.43 COLOUR :
• When NTSC 3.58 COLOUR set, NTSC 4.43 COLOUR will automatically set.</td></tr>
<tr><td></td><td>Signal generator

Oscilloscope

Remote control unit</td><td>TP-47B
TP-E
[CRT SOCKET PWB]</td><td>[2. V/C]
10.COLOUR</td><td>[Method of adjustment using measuring instrument]
PAL COLOUR
(1) Receive the PAL full field colour bar signal (75% white).
(2) Connect the oscilloscope between TP-47B and TP-E.
(3) Set the ZOOM mode to REGULAR.
(4) Set the PICTURE MODE to STANDARD.
(5) Set the WHITE BALANCE to MID.
(6) Select 2. V/C from the SERVICE MODE.
(7) Select < 10.COLOUR >.
(8) Set the initial setting value of < 10.COLOUR >.
(9) Adjust the value of (A) to the value in the voltage table in the left.
(10) Press the [OK] key to memorize the set values.

SECAM COLOUR
(1) Receive the SECAM colour bar signal (75% white).
(2) Follow the same step 2 to 10 as in PAL COLOUR.

NTSC 3.58 COLOUR
(1) Input the NTSC 3.58MHz full field colour bar signal (75% white).
(2) Follow the same step 2 to 10 as in PAL COLOUR.

NTSC 4.43 COLOUR
• When NTSC 3.58 COLOUR set, NTSC 4.43 COLOUR will automatically set.</td></tr>
<tr><td colspan="4"> 

<table>
<tr><th></th><th colspan="3">Voltage setting</th></tr>
<tr><th></th><th>PAL</th><th>SECAM</th><th>NTSC</th></tr>
<tr><td>VOLTAGE (W-B)</td><td>+28V</td><td>+24V</td><td>+12V</td></tr>
</table>
Voltage table</td></tr>
</table>

<table>
<tr><th>Item</th><th>Measuring instrument</th><th>Test point</th><th>Adjustment part</th><th>Description</th></tr>
<tr><td>SUB HUE</td><td>Signal generator

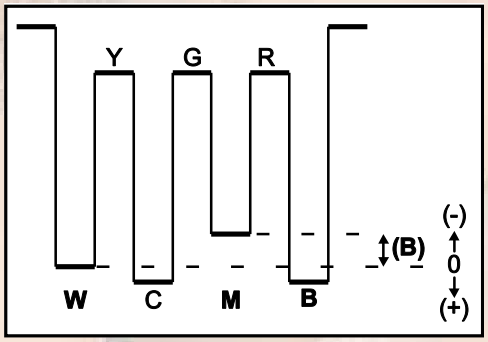
Remote control unit</td><td></td><td>[2. V/C]
11.HUE</td><td rowspan="3">[Method of adjustment without measuring instrument]
NTSC 3.58 HUE
(1) Input the NTSC 3.58MHz full field colour bar signal (75% white).
(2) Set the ZOOM mode to REGULAR.
(3) Set the PICTURE MODE to STANDARD.
(4) Set the WHITE BALANCE to MID.
(5) Select 2. V/C from the SERVICE MODE.
(6) Select < 11.HUE >.
(7) Set the initial setting value of < 11.HUE >.
(8) If you cannot get the best HUE with the initial setting value, make fine adjustment until you get the best HUE.
(9) Press the [OK] key to memorize the set values.

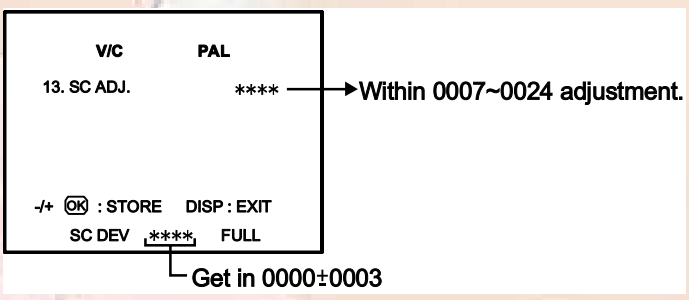
NTSC 4.43 HUE
• When NTSC 3.58 COLOUR set, NTSC 4.43 COLOUR will automatically set.

[Method of adjustment using measuring instrument]
NTSC 3.58 HUE
(1) Input the NTSC 3.58MHz full field colour bar signal (75% white).
(2) Set the ZOOM mode to REGULAR.
(3) Set the PICTURE MODE to STANDARD.
(4) Set the WHITE BALANCE to MID.
(5) Select 2. V/C from the SERVICE MODE.
(6) Select < 11.HUE >.
(7) Set the initial setting value of < 11.HUE >.
(8) Connect the oscilloscope between TP-47B and TP-E.
(9) Adjust NTSC 3.58 HUE and bring the value of (B) in the illustration to -13V.
(10) Press the [OK] key to memorize the set values.

NTSC 4.43 HUE
• When NTSC 3.58 COLOUR set, NTSC 4.43 COLOUR will automatically set.</td></tr>
<tr><td>Signal generator

Oscilloscope

Remote control unit</td><td>TP-47B
TP-E
[CRT SOCKET PWB]</td><td>[2. V/C]
11.HUE</td></tr>
<tr><td colspan="3"> 
</td></tr>
<tr><td>COLOUR DECODER VCO</td><td>Signal generator

Remote control unit</td><td></td><td>[2. V/C]
13.SC ADJ</td><td>(1) Receive the PAL full field colour bar signal (75% white).
(2) Set the ZOOM mode to REGULAR.
(3) Set the PICTURE MODE to STANDARD.
(4) Set the WHITE BALANCE to MID.
(5) Select 2. V/C from the SERVICE MODE.
(6) Select < 13. SC ADJ >.
(7) Adjust the value "SC DEV" indicated below of screen get in 0000±0003. "SC DEV" should be adjusted within 0007 to 0024.
(8) Press the [OK] key to memorize the set values.
Note :
When the [OK] key is pressed, VCO for colour decoder will be automatically set at the respective values.</td></tr>
<tr><td colspan="3"> 
</td></tr>
</table>

4.8.5 VSM PRESET SETTING

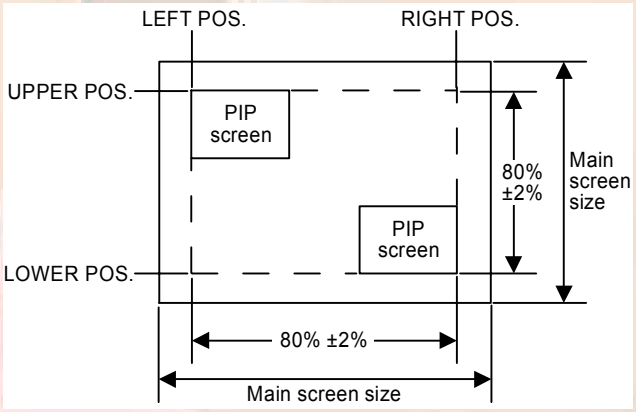
Item	Measuring instrument	Test point	Adjustment part	Description
VSM PRESET	Remote control unit		[5.VSM PRESET] 1.CONT. 2.BRIGHT 3.SHARP 4.COLOUR 5.TINT 6.WDR R 7.WDR G 8.WDR B	(1) Select 5.VSM PRESET from the SERVICE MODE. (2) Select the BRIGHT with the [OK] key. (3) Adjust the [MENU ◂ / ▸] key to bring the set values of < 1.CONT > - < 5.TINT > to the values shown in the table. (4) Press the [OK] key to memorize the set values. (5) Select the STANDARD with the [OK] key. (6) Repeat the steps 3. to 4. as above. (7) Select the SOFT with the [OK] key. (8) Repeat the steps 3. to 4. as above. (9) Select COOL with the [OK] key. (10) Adjust the [MENU ◂ / ▸] key to bring the set values of < 6.WDR R > to < 8.WDR B > to the values shown in the table. (11) Press the [OK] key to memorize the set values. (12) Select COOL with the [OK] key. (13) Repeat the steps 10. to 11. as above. (14) Select WARM with the [OK] key. (15) Repeat the steps 10. to 11. as above. (16) Select NORAML with the [OK] key. (17) Repeat the steps 10. to 11. as above.

	BRIGHT	STANDARD	SOFT
1. CONT	16	-2	0
2. BRIGHT	-2	-2	0
3. SHARP	0	-10	0
4. COLOUR	0	-2	0
5. TINT	0	0	0

	COOL	NORMAL	WARM
1. WDR R	-12	22	0
2. WDR G	-11	2	0
3. WDR B	0	0	0

4.8.6 PIP SETTING [HV-29JH74/G]

Item	Measuring instrument	Test point	Adjustment part	Description
PIP POSITION	Signal generator Remote control unit		[7. PIP] 3. PIP HORPOS 4. PIP VERPOS	• Proceed to the following adjustment after having completed the adjustments of DEFLECTION circuit. **PAL PIP POSITION** (1) Receive the PAL colour bar signal for Main screen and input the PAL cross hatch signal for PIP screen. (2) Set the ZOOM mode to REGULAR. (3) Select 7. PIP from the SERVICE MODE. (4) Select < 3. PIP HORPOS > and < 4. PIP VERPOS >. (5) Adjust the left upper position of PIP screen is roughly shown in a left figure. **NTSC PIP POSITION** (1) Receive the NTSC colour bar signal for Main screen and input the NTSC cross hatch signal for PIP screen. (2) Follow the same step 2 to 5 as in PAL POSITION.



4.8.7 PURITY AND CONVERGENCE

■ **PURITY ADJUSTMENT**

(1) Demagnetize CRT with the demagnetizer.

(2) Loosen the retainer screw of the deflection yoke.

(3) Remove the wedges.

(4) Input a green raster signal from the signal generator, and turn the screen to green raster.

(5) Move the deflection yoke backward.

(6) Bring the long lug of the purity magnets on the short lug and position them horizontally. (Fig.2)

(7) Adjust the gap between two lugs so that the GREEN RASTER will come into the center of the screen. (Fig.3)

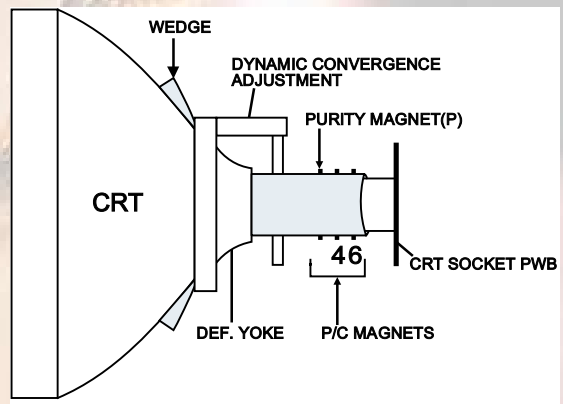
(8) Move the deflection yoke forward, and fix the position of the deflection yoke so that the whole screen will become green.

(9) Insert the wedge to the top side of the deflection yoke so that it will not move.

(10) Input a crosshatch signal.

(11) Verify that the screen is horizontal.

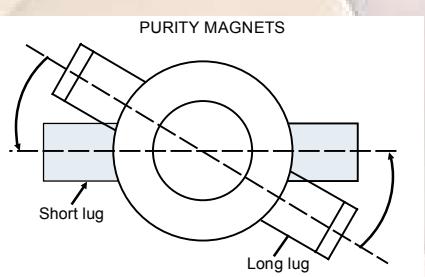
(12) Input red and blue raster signals, and make sure that purity is properly adjusted.



P/C MAGNETS

P : PURITY MAGNET
4 : 4 POLES (convergence magnet)
6 : 6 POLES (convergence magnet)

Fig.1



Bring the long lug over the short lug and position them horizontally.

Fig.2

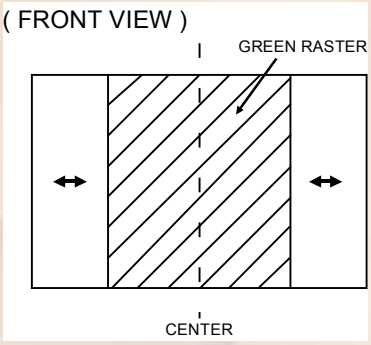


Fig.3

■ PURITY ADJUSTMENT

(1) Input a crosshatch signal.

(2) Using 4-pole convergence magnets, overlap the red and blue lines in the center of the screen (Fig.1) and turn them to magenta (red/blue).

(3) Using 6-pole convergence magnets, overlap the magenta (red/blue) and green lines in the center of the screen and turn them to white.

(4) Repeat 2 and 3 above, and make best convergence.

- After adjustment, fix the wedge at the original position.Fasten the retainer screw of the deflection yoke.Fix the 6 magnets with glue.

■ DYNAMIC (periphery) CONVERGENCE ADJUSTMENT

After adjusting purity & static convergence.

(1) Move the deflection yoke up and down to adjust the pin cushion distortion in the screen top and bottom. (See Fig. 2)

(2) Move the deflection yoke left to right to overlap the lines in the periphery, and match the Yv(VR1).
(As shown in Fig. 4)

(3) Using the VR1 on the deflection yoke, match the YH (CROSS). (See Fig. 3 and 6)

(4) Using the VR2 on the deflection yoke, match the YH (BOW). (See Fig. 3 and 6)

(5) Repeat the steps 1 and 4 and obtain an optimum convergence.

(6) Differential(XV) coil ADJUSTMENT.
In case where the horizontal lines of red and blue around the center of both sides of the picture as shown in Fig. 5, adjust the XV difference by using the differential coil (XV coil) on the top of the deflection yoke (Fig. 6) so as to minimize the XV difference.

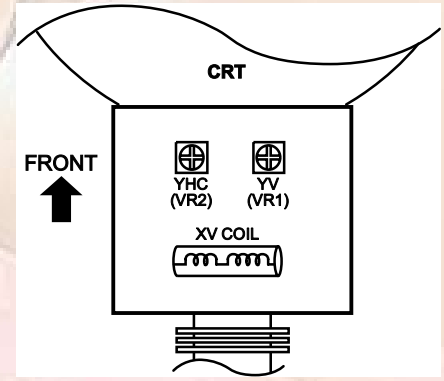


Fig.6

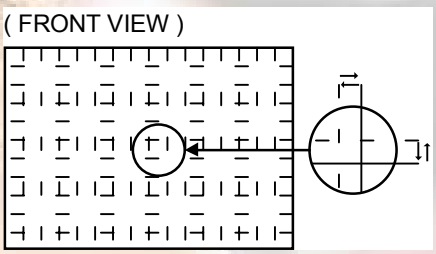


Fig.1

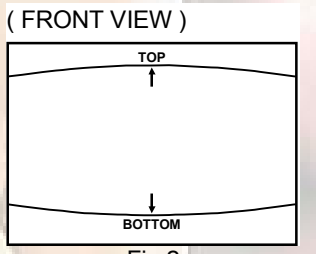


Fig.2

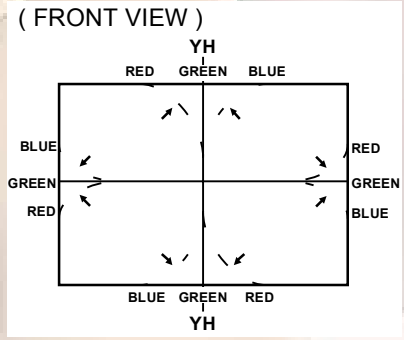


Fig.3

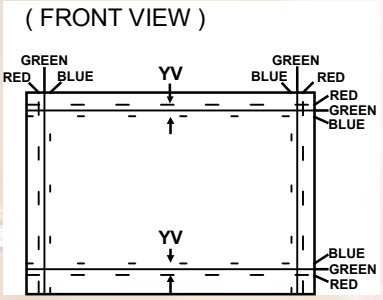


Fig.4

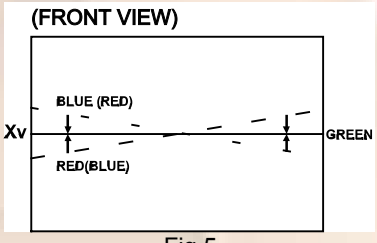


Fig.5

SECTION 5
TROUBLESHOOTING

5.1 SELF CHECK FUNCTIONS

5.1.1 OUTLINE

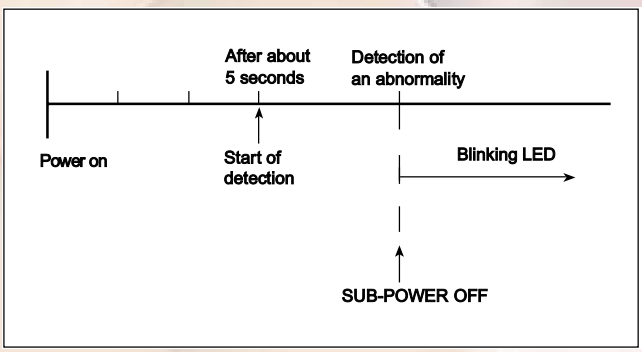
These models have self-check functions given below. When an abnormality has been detected, the SUB POWER is turned off and POWER LED is blinking. green An abnormality is detected by the signal input state of the control line connected to the microcomputer.

5.1.2 SELF CHECK ITEMS

Check item	Details of detection	Method of detection	State of abnormality
B1 over-current protection	An over-current on the low B line is detected.	The protect port on the microcomputer (11pin) is always monitored at 150msec intervals. If an abnormality is detected nine time successively, it is judged that there is an abnormality.	When an abnormality has detected, the SUB POWER is turned off and POWER LED begins blinking green. While the SUB POWER is being turned off, the POWER key on the remote control unit is not operational until the power cord is taken out and put in again.
CRT neck broken protection	Operation of CRT neck broken protection circuit	DITTO	DITTO
X-ray protection	The rise of a high voltage valueis detected	DITTO	DITTO

5.1.3 SELF CHECK INDICATING FUNCTION

When an abnormality has been detected at about 5 seconds after the power is turned on, the SUB POWER is turned off immediately and the POWER LED begins blinking green.



Victor Company of Japan, Limited
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(No.YA164)

Printed in Japan
VPT

JVC

COLOUR TELEVISION

DigiPure
100Hz & PROGRESSIVE SCAN

HV-29JH24
HV-29JH54
HV-29JH74
HV-29VH14
HV-29VH54

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INSTRUCTIONS

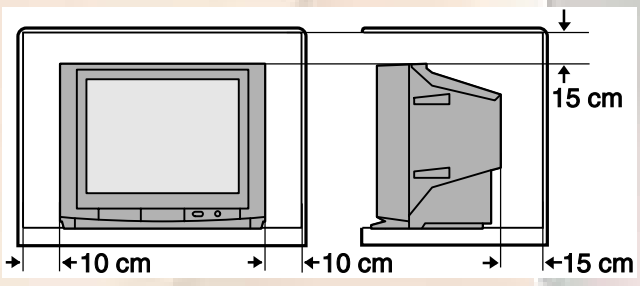
GGT0056-001A-H

Thank you for buying this JVC colour television.
To make sure you understand how to use your new TV, please read this manual thoroughly before you begin.

WARNING: TO PREVENT FIRE OR SHOCK HAZARD, DO NOT EXPOSE THIS APPLIANCE TO RAIN OR MOISTURE.

CAUTION: TO ENSURE PERSONAL SAFETY, OBSERVE THE FOLLOWING RULES REGARDING THE USE OF THIS TV.

1 Operate only from the power source indicated on the rear of the TV.
2 Avoid damaging the power cord and mains plug. When unplugging the TV, grasp the mains plug. Do not pull on the power cord.
3 Never block or cover the ventilation openings.
Never install the TV where good ventilation is unattainable.
When installing this TV, leave spaces for ventilation around the TV of more than the minimum distances as shown.



4 Do not allow objects or liquid into the cabinet openings.
5 In the event of a fault, unplug the unit and call a service technician. Do not attempt to repair it yourself or remove the rear cover.
6 The surface of the TV screen is easily damaged. Be very careful with it when handling the TV. Should the TV screen become soiled, wipe it with a soft dry cloth. Never use rub it forcefully. Never use any cleaner or detergent on it.
7 If you are not going to use this TV for a long period of time, be sure to disconnect the AC plug from the AC socket.
8 The apparatus shall not be exposed to dripping or splashing and that no objects filled with liquids, such as vases, shall be placed on the apparatus.

Introduction of the functions

Function	Description
DigiPure	The DigiPure function uses the latest digital technology to give you a natural looking picture.
Progressive Scan (525P / 625P signal possible)	This TV can display the Progressive video signal both of 525P (NTSC) and 625P (PAL) signal.
Cinema Surround	The Cinema Surround function gives you a surround sound with a “live” effect.

Setting up your TV

CAUTION

- Turn off all the equipment including the TV before connecting anything.

1 Connecting the aerial and VCR

- Aerial cable is not supplied. Use a good quality 75-ohm coaxial cable.
- Read the manual that came with the VCR before connecting.

If not connecting a VCR (see Fig. A):

Connect an aerial cable to the aerial socket on this TV.

If connecting a VCR (see Fig. B):

1 **Connect the aerial cable to the aerial input socket on the VCR, and connect the VCR and TV with another aerial cable.**

2 **Connect the VCR's VIDEO OUT (video output) jack and the TV's VIDEO jack with a video cable.**

To connect a VCR to the TV with an S-VIDEO cable:
Connect the VCR's S-VIDEO OUT (S-VIDEO output) connector and TV's S connector with an S-VIDEO cable Ⓐ, instead of connecting with a video cable.

3 **Connect the VCR's AUDIO OUT (audio L/R output) jacks and the TV's AUDIO jacks (L/MONO and R) with an audio cable.**

- If the VCR's audio output is in mono, connect the VCR's AUDIO OUT (audio output) jack and the TV's AUDIO L/MONO jack with an audio cable.

Fig. A

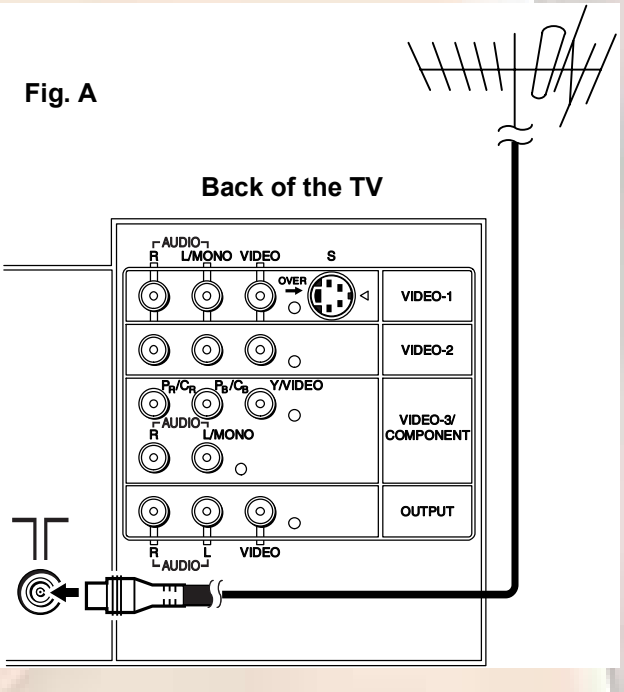
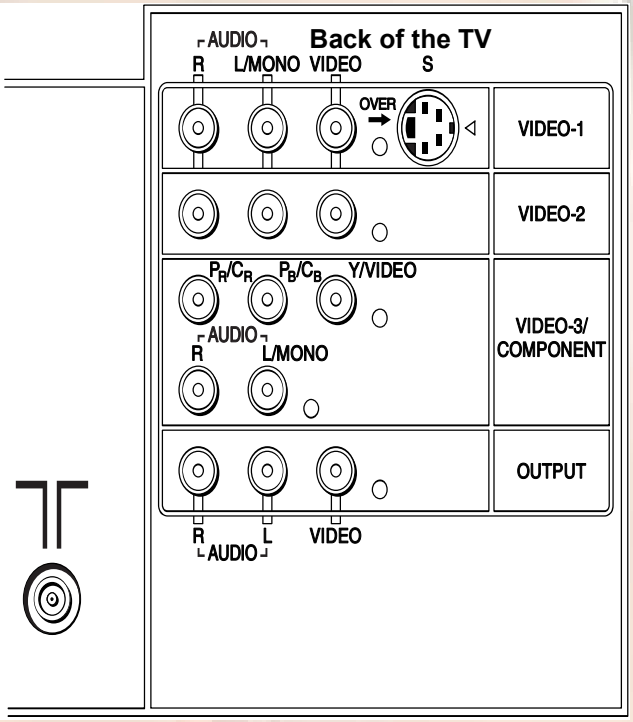


Fig. B



2 Connecting the power cord

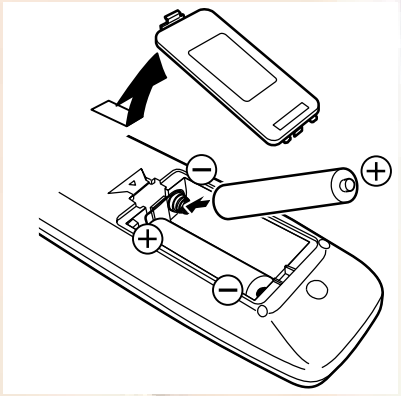
Connect the mains plug to the AC outlet.

3 Putting the batteries into the remote control

Use two AA/R6 batteries.

Insert the batteries from the ⊖ end, making sure the ⊕ and ⊖ polarities are correct.

- Follow the warnings printed on the batteries.
- If the remote control does not work properly, replace the batteries.
- The batteries we supply are only for setting up and testing your TV. Please replace them as soon as necessary.



4 Making the initial settings

When the TV is first turned on, it enters the initial setting mode, and the JVC logo is displayed.

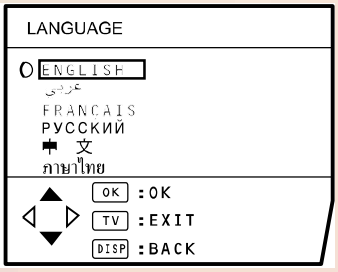
1 Press the main power button on the TV.

The TV is turned on, and the JVC logo appears.

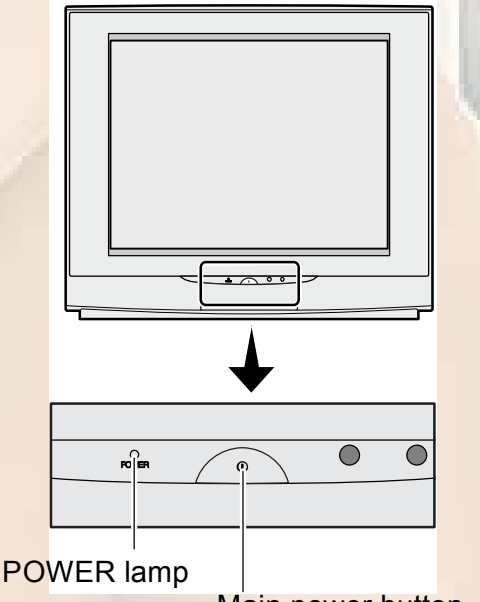
- If the POWER lamp on the TV lights red and does not change to green, your TV is in the standby mode. Press the POWER button on the remote control to turn the TV on.
- If the JVC logo does not appear, your TV has already been turned before. In this case, use the “LANGUAGE” and “AUTO PROGRAM” functions to make the initial settings. For details, see “INSTALL menu” on page 29.

2 Press the MENU/OK button.

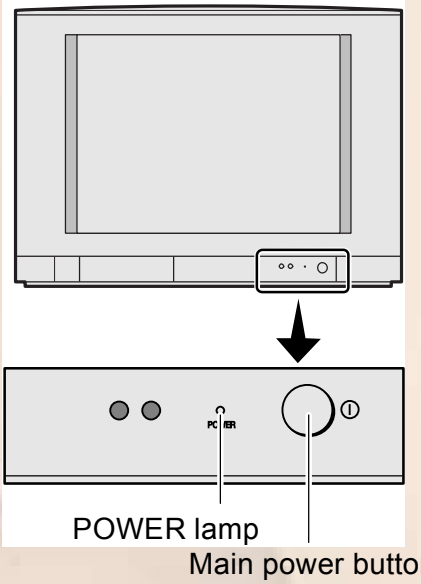
The LANGUAGE menu appears. You can choose a language for the on-screen language.



HV-29JH24 / HV-29JH54 / HV-29JH74

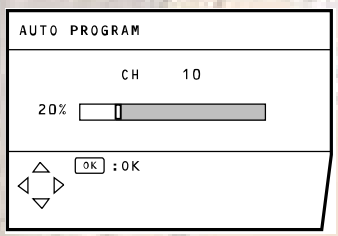


HV-29VH14 / HV29VH54



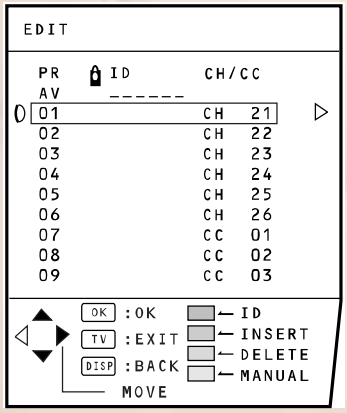
3 Press the ▼/▲ buttons to choose ENGLISH. Then press the MENU/ OK button.

The AUTO PROGRAM function starts. The TV channels you receive are automatically stored in the PR (programme numbers) LIST.



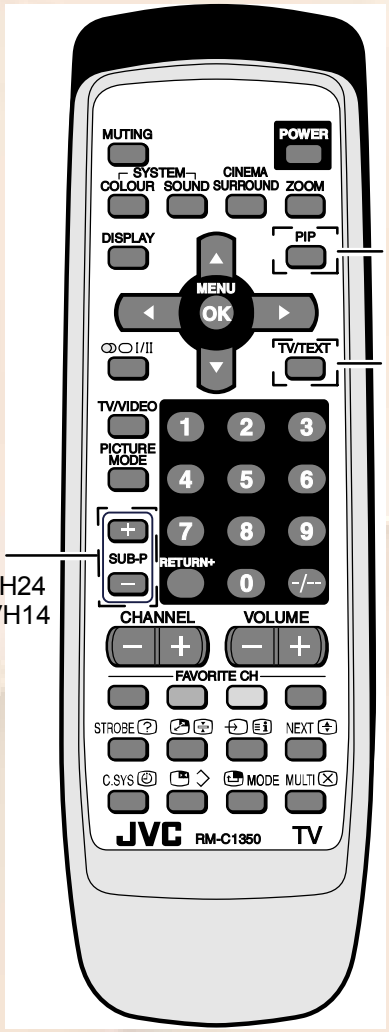
- To stop the AUTO PROGRAM function, press the MENU/OK button.

4 After the TV channels have been stored in the programme numbers (PR) list, the EDIT menu appears.



- You can proceed to edit the programme numbers list using the EDIT/MANUAL function. For details, see “EDIT/MANUAL” on page 30.
- If a TV channel you want to view is not stored in the programme numbers list, you can register it using the MANUAL function. For details, see “EDIT/MANUAL” on page 30.
- The AUTO PROGRAM function does not store a TV channel to the programme number 0 (AV).
- If you do not need to use the EDIT/MANUAL function, press the MENU/OK button to close the EDIT menu.

Now, setting up is complete. Please enjoy your new JVC TV!

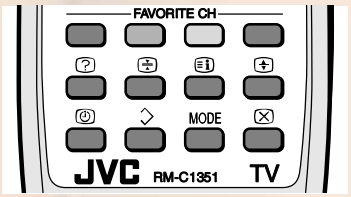


Except HV-29JH24 HV-29VH14

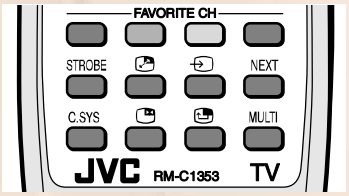
Except HV-29JH24 HV-29VH14

Except HV-29JH54 HV-29VH14 HV-29VH54

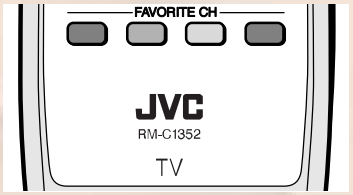
HV-29JH74



HV-29JH24

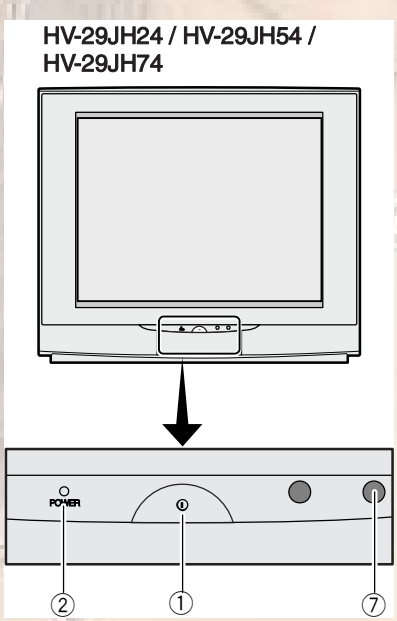


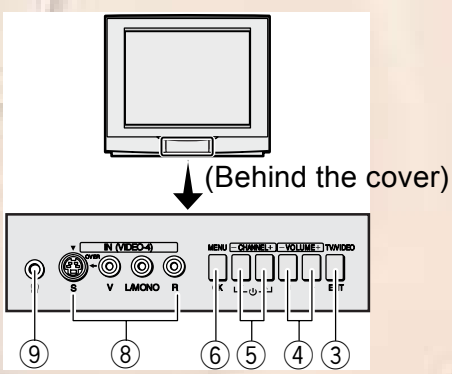
HV-29JH54 / HV-29VH54

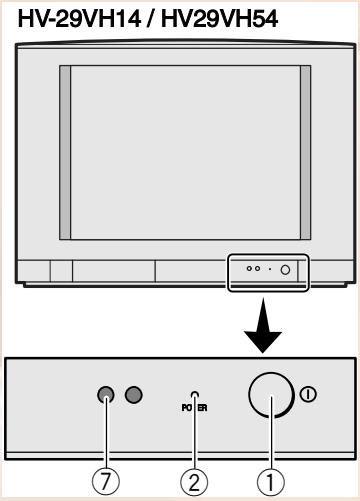


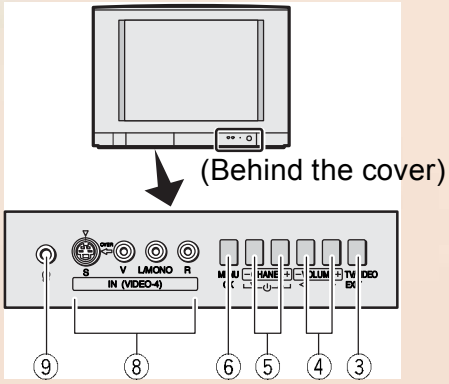
HV-29VH14

TV buttons and functions









Turn the main power on

Press the main power button ①.
The POWER lamp ② lights red and your TV is in the standby mode.

To turn the main power off:
Press the main power button again. The POWER lamp ② goes off.

Turn the TV on from standby mode

Press the CHANNEL-/+ buttons ⑤.
The POWER lamp ② lights red to green and your TV will be turned on.

- You can also turn on the TV by pressing the TV/VIDEO button ③ while it is in standby mode.

Choose a TV channel

Press the CHANNEL-/+ buttons ⑤.

Choose a VIDEO terminal

Press the TV/VIDEO button ③ or CHANNEL-/+ buttons ⑤.

Adjust the volume

Press the VOLUME-/+ buttons ④.
The volume level indicator appears.

MENU button ⑥

Press to open the menu.
For details, see “Operation with the buttons on the TV” on page 20.

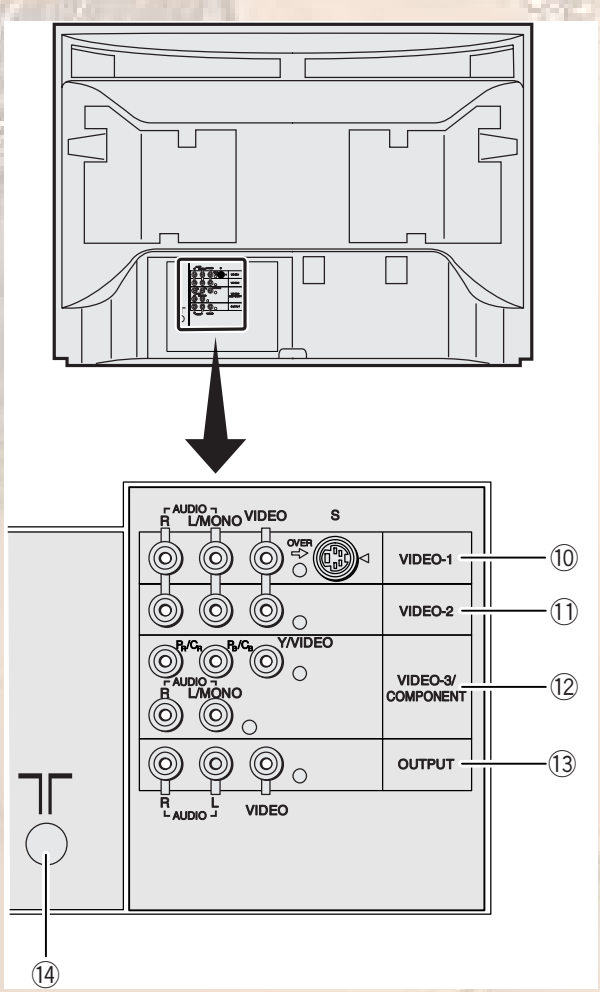
Remote control sensor ⑦ (Behind the cover)

VIDEO-4 terminal ⑧

See page 35.

Headphone jack ⑨

Connect the headphones with a stereo mini-jack (3.5mm in diameter).



VIDEO-1 terminal ⑩

- See pages 3 and 35.

VIDEO-2 terminal ⑪

- See page 35.

VIDEO-3/COMPONENT terminal ⑫

- See pages 28 and 35.

OUTPUT terminal ⑬

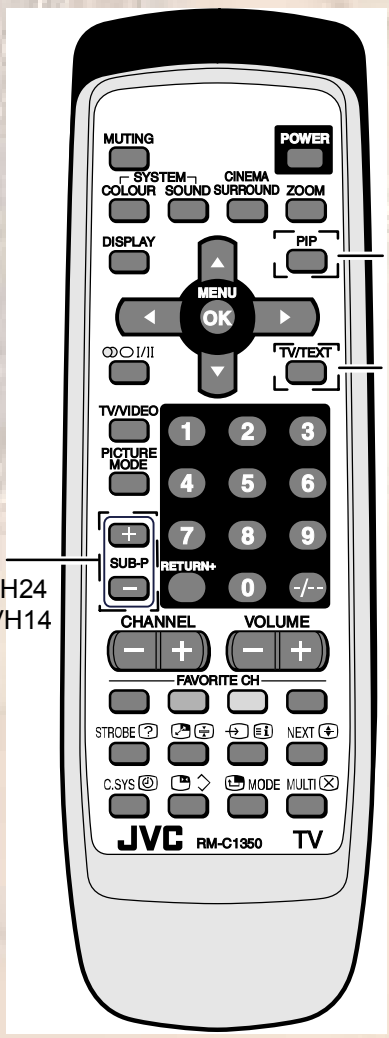
- See page 35.

Aerial socket ⑭

Connect the aerial cable.

- See page 3.

Remote control buttons and functions

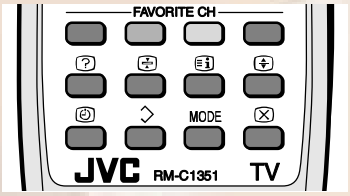


Except HV-29JH24 HV-29VH14

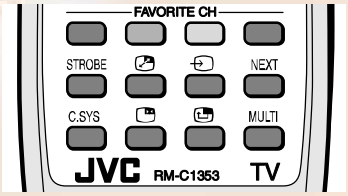
Except HV-29JH24 HV-29VH14

Except HV-29JH54 HV-29VH14 HV-29VH54

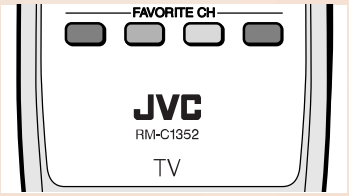
HV-29JH74



HV-29JH24



HV-29JH54 / HV-29VH54



HV-29VH14

Turn the TV on from standby mode

Press the POWER button.
The POWER lamp lights red to green and your TV will be turned on.

- You can turn on the TV from the standby mode by pressing the TV/VIDEO button, the CHANNEL-/+ buttons or the number buttons.

To turn the TV off:
Press the POWER button again.
The POWER lamp changes from green to red and the TV enters standby mode.

Choose a TV channel

Choose a programme number in which a TV channel has been set.

Press the CHANNEL-/+ buttons or enter the programme number (PR) with the number buttons.

- If you want to put a two-digit channel into the TV, press the -/--button to change to the two-digit entry system.
- You can select a channel from the PR LIST. For details, see “DISPLAY button” on page 11.
- If you do not have a clear picture or no colour appears, follow the operation procedure “COLOUR SYSTEM button” on page 11.

Adjust the volume

Press the VOLUME-/+ buttons.

Watch images from an external device

Choose a VIDEO terminal to which the external device has been connected.

Press the TV/VIDEO button.

- You can choose a VIDEO terminal with the CHANNEL-/+ buttons or from the PR LIST.

To return to a TV channel:
Press the TV/VIDEO button, the CHANNEL-/+ buttons or the number buttons.

MUTING button

Press the MUTING button to turn off the volume. Pressing the MUTING button again resumes the previous volume level.

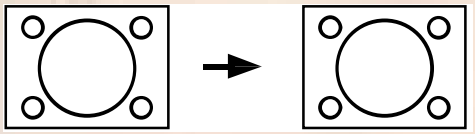
ZOOM button

You can change the screen size according to the picture aspect ratio. Choose the optimum one from the following ZOOM modes.

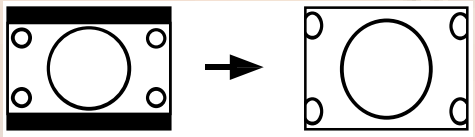
Press the ZOOM button to choose a mode.

- The ZOOM button works only in the normal screen.

REGULAR:
Use to view a normal picture (4:3 aspect ratio) as its original size is.

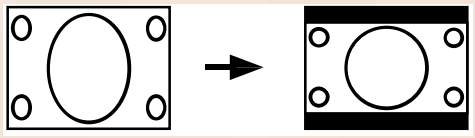


ZOOM:
You can zoom up the Wide picture (16:9 aspect ratio) to fill the TV screen.



- The left side and right side of the Wide picture (16:9 aspect ratio) will be cut off.

16:9:
This mode converts a normal picture (4:3 aspect ratio) into a Wide picture (16:9 aspect ratio).



- Use for picture with a 16:9 aspect ratio that have been squeezed into a normal picture (4:3 aspect ratio), you can restore their original dimensions.

CINEMA SURROUND button

You can enjoy an enhanced sound for a wider audience by using CINEMA SURROUND function.

Press the CINEMA SURROUND button to select one of CINEMA SURROUND modes.

HIGH/LOW:
When you listen to the stereo sound, please select HIGH or LOW mode.
You can enjoy the sound for a wider audience similar to the experience at the theatre.

- In case that you setting up the CINEMA SURROUND function to HIGH mode, there may be slight volume distortion. In case that occurs, please switch the HIGH mode to LOW mode, the effect of CINEMA SURROUND functions will be less noticeable, however, the volume distortion will be corrected.

MONO:
Select the MONO mode, when you listen to the mono sound.
You can enjoy the sound for a wider audience similar to stereo sound.

OFF:
The CINEMA SURROUND function switches off.

PICTURE MODE button

You can choose one of three PICTURE MODEs (three kinds of picture setting) to adjust the picture settings automatically.

Press the PICTURE MODE button to choose a mode.

BRIGHT:
Heightens contrast and sharpness.

STANDARD:
Standardizes picture adjustment.

SOFT:
Softens contrast and sharpness.

RETURN+ button

The RETURN+ button has two functions; the RETURN+ function and the RETURN function. If a channel has been registered as the “Return Channel”, the RETURN+ function operates. If there is no setting for the “Return Channel”, the RETURN function operates.

RETURN+ function

By registering a channel you frequently view as the “Return Channel”, you can select that channel at any time simply by pressing the RETURN+ button.

To register a TV channel as the “Return Channel”:

Choose the Programme number to which the channel you want to register has been set, and press the RETURN+ button and hold for more than 3 seconds continuously. “RETURN PLUS PROGRAMMED!” is displayed and the registration is completed.

To cancel a TV channel registered as the “Return Channel”:

While viewing any TV channel, press the RETURN+ button and hold for more than 3 seconds continuously. “RETURN PLUS CANCELED!” is displayed and the registration is cancelled.

- When you turn off the TV, the registration for the “Return Channel” is cancelled.
- If you want to view the “Return Channel” and another TV channel alternately, first choose a channel other than the “Return Channel”. And then press the RETURN+ button to change the channel to the “Return Channel” In this way, you can view two channels alternately by pressing the RETURN+ button.

RETURN function

The TV temporarily memorises the TV channel that was chosen right before the current TV channel as the “Last Channel”. By pressing the RETUTN+ button, you can alternately view the current TV channel and the “Last Channel”.

- If you want to view two channels alternately by using the RETURN function, first choose one TV channel and then choose the other TV channel with the Number buttons. If you choose the TV channel without using the Number buttons, there are cases where a channel other than the one you first chose is registered as the “Last Channel”.

OOO I/II button

When you are viewing a bilingual broadcast programme, you can choose the sound from Bilingual I (Sub I) or Bilingual II (Sub II).

- When the stereo broadcasting is received poorly, you can change from stereo to mono sound so that you can hear the broadcast more clearly and easily.

Press the OOO I/II button to choose a sound mode.

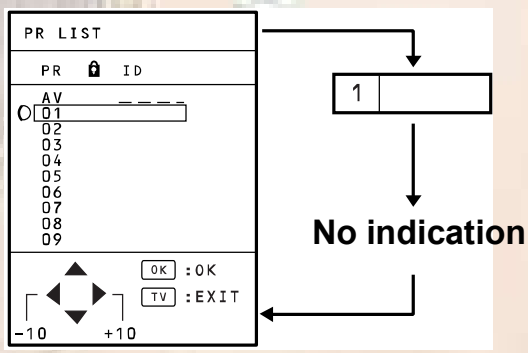
OO : Stereo sound
O : mono sound
I : Bilingual I (sub I)
II : Bilingual II (sub II)
MONO : Cancels the Multi Sound function, and the sound becomes monaural.

- The sound mode you can choose differs depending on the TV programme.
- This function does not work in the VIDEO modes.

DISPLAY button

You can display the PR LIST, programme number or VIDEO terminal number on the screen.

Press the DISPLAY button.
Press the DISPLAY button changes the display as follows:



Choose a TV channel or a VIDEO terminal

1 **Press the DISPLAY button to display the PR LIST.**

2 **Press the ▼/▲ and ◄/► buttons to choose a programme number or VIDEO terminal.**
Then press the MENU/OK button.

- For programme numbers with the CHANNEL GUARD function set, the 🔒 (CHANNEL GUARD) mark is displayed next to the programme number in the PR LIST.
- The VIDEO terminals are registered after the programme number PR99.
- The AV channel (channel number 0) in the PR LIST will be chosen only if you connect the VCR to the TV with an aerial cable without connecting a video cable.

COLOUR SYSTEM button

The colour system is chosen automatically. However, if the picture is not clear or no colour appears, choose the colour system manually.

Press the COLOUR SYSTEM button to choose the appropriate colour system.

AUTO:
This function detects a colour system from the input signal.

- The AUTO mode may not function properly if you have poor signal quality. If the picture is abnormal in the AUTO mode, choose another colour system manually.
- The AUTO mode detects a colour system from the input signal and chooses the appropriate colour system automatically.
- For the colour systems in each country or region, see the table “BROADCASTING SYSTEMS” on page 12.

PAL/SECAM/NTSC3.58/NTSC4.43:
PAL, SECAM, or NTSC colour system.

SOUND SYSTEM button

The sound system is chosen automatically. However, if you cannot hear the sound normally even when the picture appears normally, choose the sound system manually.

Press the SOUND SYSTEM button to choose the appropriate sound system.

B/G : B/G system
I : I system
D/K : D/K system
M : M system

- This function does not work in the VIDEO mode.
- For the sound systems in each country or region, see the table “BROADCASTING SYSTEMS” on page 12.

BROADCASTING SYSTEMS

For sound and colour systems in your country or region, refer to the table below:

COLOUR SYSTEM

Area	Country or Region	System
Asia, Middle East	Bahrain, Kuwait, Oman, Qatar, United Arab Emirates, Yemen, etc. Indonesia, Malaysia, Singapore, Thailand, India, etc.	PAL
	China, Vietnam, etc.	PAL
	Hong Kong, etc.	PAL
	Islamic Republic of Iran, Lebanon, Saudi Arabia, etc.	SECAM
	Philippines, Taiwan, Myanmar, etc.	NTSC
Europe	Russia, etc.	SECAM
	Czech Republic, Poland, etc.	PAL
	Germany, Holland, Belgium, etc.	PAL
	UK, etc.	PAL
Oceania	Australia, New Zealand, etc.	PAL
Africa	Republic of South Africa, etc.	PAL
	Nigeria, etc.	PAL
	Egypt, Morocco, etc.	SECAM

SOUND SYSTEM

Area	Country or Region	System
Asia, Middle East	Bahrain, Kuwait, Oman, Qatar, United Arab Emirates, Yemen, etc. Indonesia, Malaysia, Singapore, Thailand, India, etc.	B/G
	China, Vietnam, etc.	D/K
	Hong Kong, etc.	I
	Islamic Republic of Iran, Lebanon, Saudi Arabia, etc.	B/G
	Philippines, Taiwan, Myanmar, etc.	M
Europe	Russia, etc.	D/K
	Czech Republic, Poland, etc.	D/K
	Germany, Holland, Belgium, etc.	B/G
	UK, etc.	I
Oceania	Australia, New Zealand, etc.	B/G
Africa	Republic of South Africa, etc.	I
	Nigeria, etc.	B/G
	Egypt, Morocco, etc.	B/G

■ Favorite channel registration

You can register your favorite TV channels with the colour buttons (Red, Green, Yellow and Blue). After registration you can recall the favorite channel by pressing the colour button.

1 **In the normal screen, choose a TV channel (PR01-99) you want to register.**
For detailed operation, see “Choose a TV channel” on page 8.

2 **Press and hold a colour button for 3 seconds or more.**
Then “FAVORITE CHANNEL PROGRAMMED!” appears on the screen and the current channel is registered.
- If the chosen channel is already registered as the favorite channel, when a colour button is pressed, the registered colour button icon appears on the top right of the screen.

- You cannot register in the Text mode, or while multiple screens, such as PIP (picture in picture) are displayed.
- Also you cannot register if the chosen channel is guarded with the CHANNEL GUARD function and the screen is blue, or if an on-screen menu is displayed.
- Even if you perform AUTO PROGRAM function, the registration made here will not be changed. (For AUTO PROGRAM, see page 29.)

Recalling the favorite channel

Press the colour button, then the registered favorite channel will be displayed.
- You cannot recall the favorite channel in the Text mode, Menu mode where an on-screen menu is displayed, or while multiple screens are displayed.

- The picture effect dedicated for the colour button applies. For details, see “Setting the picture effect” below:

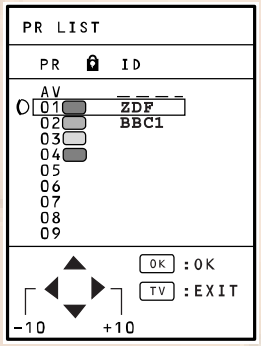
Setting the picture effect

Each colour button has a dedicated picture effect. When you choose a favorite channel, the dedicated picture effect is used. When shipped, the factory set picture effect is used for this purpose. However, you can set this picture effect as required. For details, see “FAVORITE CH SETTING” on page 24.

Showing the favorite channels

Press the DISPLAY button to display the PR LIST.

You can see the favorite channel that has the registered colour button icon at the right of the channel number.



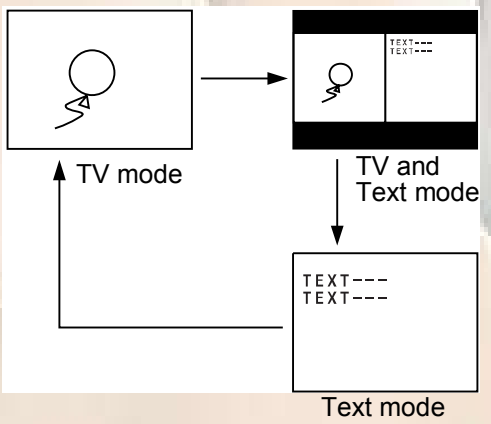
■ Viewing a teletext programme

[Except HV-29JH54/HV-29VH14/ HV-29VH54]

1 Choose a TV channel with a teletext broadcast.

2 Press the TV/TEXT button.

Pressing the TV/TEXT button changes the mode as follows:



3 Choose a teletext page by pressing the CHANNEL-/+ buttons, number buttons or colour buttons.

To return to the TV mode:

Press the TV/TEXT button or TV/VIDEO button.

- If you have trouble receiving teletext broadcasts, consult your local dealer or the broadcast station.
- In the Text mode, the ZOOM mode is fixed to the REGULAR mode.
- No menu operations are possible when viewing a teletext programme.
- If characters on a teletext programme do not appear properly, change the TELETEXT LANGUAGE setting. For details, see “TELETEXT LANGUAGE” on page 34.

(Hold) button

You can hold a teletext page on the screen for as long as you want, even while several other teletext pages are being received.

Press the (Hold) button.

The (hold) are displayed at the top left of the screen.

To cancel the Hold function:

Press the (Hold) button again.

(Reveal) button

Some teletext pages include hidden text (such as answers to a quiz).
You can display the hidden text.

Each time you press the (Reveal) button, text is hidden or revealed.

(Size) button

You can double the height of teletext display.

Press the (Size) button.

(Index) button

You can return to the index page instantly.

Press the (Index) button.

- In the List mode, you can return to the page number displayed in the lower left area of the screen.

(Cancel) button

You can search for a teletext page while watching TV.

1 **Press the number button to enter a page number, or press the colour button.**
The TV searches for a teletext page.

2 **Press the (Cancel) button.**
The TV programme appears. When the TV finds the teletext page, its page number appears in the upper left of the screen.

3 **Press the (Cancel) button to return to a teletext page when the page number is on the screen.**
- You cannot return to the TV mode with the (Cancel) button.

(Sub-page) button

Some teletext pages include sub-pages that are automatically displayed. You can hold any sub-page, or view it at any time.

1 **Press the (Sub-page) button to operate the Sub-page function.**
Sub-page numbers are displayed at the left of the screen.

Colour*	Meaning of sub-page number
Yellow	Currently being displayed.
White	Can be displayed.
Blue or Red	Cannot be displayed and it is not sent.

*: Background colour of the sub-page number.

2 **Press the CHANNEL-/+ buttons to choose a sub-page number.**

To cancel the (Sub-page) function:

Press the (Sub-page) button again.

Using the List mode

You can store the numbers of your favorite teletext pages in memory and call them up quickly using the colour buttons.

To store the page numbers:

1 **Press the MODE button to engage the List mode.**
The stored page numbers are displayed at the bottom of the screen.

2 **Press a colour button to choose a position. Then press the number buttons to enter the page number.**

3 **Press and hold down the ◇ (Store) button.**
The four page numbers blink white to indicate that they are stored in memory.

To call up a stored page:

1 **Press the MODE button to engage the List mode.**

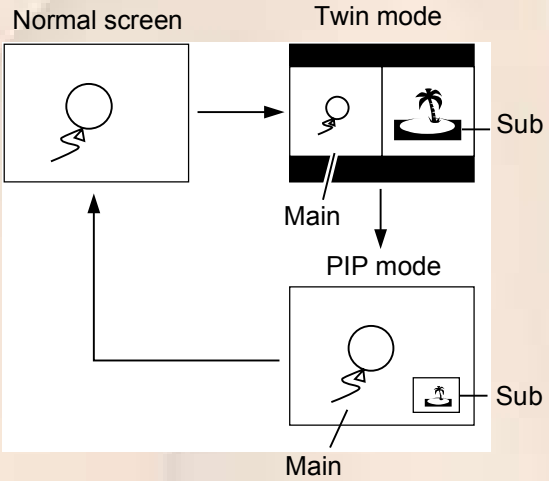
2 **Press a colour button to which a page has been assigned.**

To exit the List mode:
Press the MODE button again.

■ Twin and PIP (picture in picture) function [Except HV-29JH24/HV-29VH14]

You can display two different pictures, the main picture and sub picture, at a time. In Twin mode, both pictures are equal in size. In PIP mode, the small sub picture appears at a corner of the screen. You can swap the main picture and sub picture instantly. Note that the main and sub pictures use different input sources each other. For example, if the main picture's source is TV, the sub picture's one will be VIDEO.

While watching a normal picture, press the PIP button.
Pressing the PIP button changes the mode as follows:



- You can also enter this mode while in the Multi-display mode, Freeze mode or Strobe mode, except in the Text mode.

To return to the normal screen:
Press the PIP button until the sub picture disappears.

- You can hear the sound from the main picture only.
- In the normal screen, if the current channel is guarded with the CHANNEL GUARD function and the screen is blue, the PIP button does not work.

- When you exit the Twin or PIP mode, the sub picture lastly displayed will be saved, and it will appear next time.
- The following table shows what will happen if the same input sources are chosen for both main and sub pictures when you enter the Twin or PIP mode. If the main picture is the same as the sub picture, then the sub picture will be changed to VIDEO-1. But if the main picture is VIDEO-1, then the sub picture will be changed to VIDEO-2.

[When the same input sources are chosen]

Main picture	Sub picture
TV	TV → VIDEO-1
VIDEO-1	VIDEO-1 → VIDEO-2
VIDEO-2	VIDEO-2 → VIDEO-1
VIDEO-3	VIDEO-3 → VIDEO-1
VIDEO-4	VIDEO-4 → VIDEO-1

- If you press the PIP button when receiving the Progressive Video Signal (525P or 625P signal), "525P" or “625P” appears on the screen and the Twin/PIP function does not operate.

TV channel selection

For the main picture:
Choose a channel using the CHANNEL-/+ buttons or the number buttons.

For the sub picture:
Choose a channel using the SUB-P-/+ buttons.

Input source selection (TV, VIDEO-1, -2, -3 or -4)

For the main picture:
Press the TV/VIDEO button.
Each time you press the button, the input source changes as follows (the one used for the sub picture will be skipped):
VIDEO-1 → VIDEO-2 → VIDEO-3 → VIDEO-4 → TV

For the sub picture:
Press the (Input) button.
Each time you press the button, the input source changes as follow (the one used for the main picture will be skipped):
VIDEO-1 → VIDEO-2 → VIDEO-3 → VIDEO-4 → TV

Swapping the pictures

Press the (Swap) button.
Each time you press the button, the main picture and the sub picture will be swapped.

Changing the sub picture position (in PIP mode only)

You can position the sub picture to one of corners of the main picture.

Press the (Position) button.
Each time you press the button, the sub picture moves clockwise (lower right → lower left → upper left → upper right).

Setting the colour system of the sub picture

You can choose the colour system of the sub picture.

While the sub picture is being displayed, press the C.SYS button.
Each time you press the button, the colour system of the sub picture changes as follows:
AUTO → PAL → SECAM → NTSC3.58 → NTSC4.43

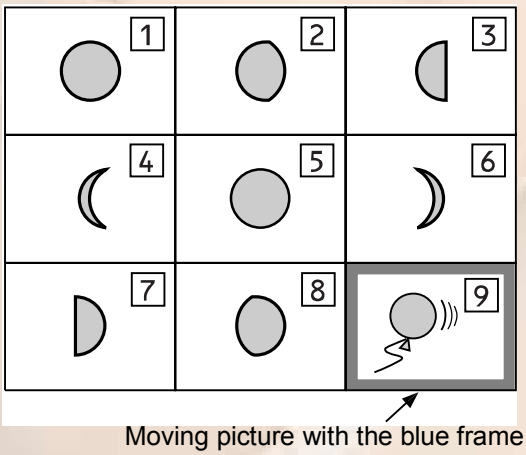
- For all source, normally choose AUTO.
- The chosen colour system will not be saved.
- If the main picture and the sub picture are of different colour systems, there will be some differences in the size of the sub picture and flicker may take place.

■ Multi-display function [Except HV-29JH24/HV-29VH14]

You can watch nine different TV programmes at a time. As you can display nine TV programmes successively, this function is convenient to locate the TV programme you want. Eight pictures are still pictures and the last one is the moving picture with the blue frame. You can choose any picture as the moving picture and then watch it in the normal screen.

Entering the Multi-display mode

While watching a TV programme in the normal screen, press the MULTI button.
The screen changes to the multi-picture screen and nine pictures are displayed in the numerical order.



Moving picture with the blue frame

- You can also enter this mode while in the Twin mode, but not in the Text mode.
- Pictures will appear in the assigned order in the PR LIST (PR01-99).
- If the number of pictures to be displayed at a time is less than nine, fewer pictures than nine will be displayed.
- The guarded channel with the CHANNEL GUARD function will be skipped and will not be displayed.
- You cannot display a video image in the Multi-display mode.
- The RETURN+ button, OOOI/II button, COLOUR SYSTEM button and SOUND SYSTEM button are disabled in the Multi-display mode.
- If you press the MULTI button when receiving the Progressive video signal (525P or 625P signal), "525P" or “625P” appears on the screen and the MULTI function does not operate.

Returning to the normal screen

Press the MULTI button or MENU/OK button, or choose a TV channel with the number buttons.
The moving picture with the blue frame will be displayed in the normal screen.

- Pressing the TV/VIDEO button will also returns the TV to the normal screen.

Choosing a picture as the moving one

You can choose one of the pictures as the moving picture with the blue frame.

Press ◄/► and ▼/▲ buttons to move the blue frame.
The chosen picture becomes the moving picture.

- Pressing the ► button in the right-most position “3” or “6” will scroll the blue frame to the next position, “4” or “7”. While, pressing the ◄ button in the left-most position “4” or “7” will scroll the blue frame to the previous position, “3” or “6”.

Displaying the next nine pictures

Press the NEXT button.
The next nine pictures will be displayed at a time. By pressing the NEXT button successively, you can display all available pictures except video images.

Displaying the channel numbers on the multi-display screen

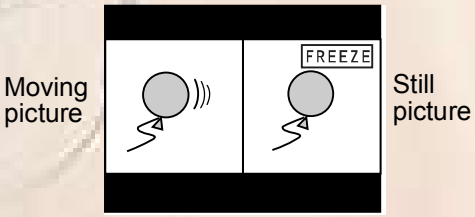
Press the DISPLAY button.
Respective channel numbers appear on the nine pictures.

To go off the channel numbers:
Press the DISPLAY button again.

■ Freeze function
[Except HV-29JH24/HV-29VH14]

While watching a picture, you can capture a still picture you want. The captured still picture and the moving picture are displayed at a time. (They are the pictures of the same source.)

Press the (Freeze) button.
Still picture is captured and displayed on the right side of the screen. On the left, the moving picture is displayed.



- The (Freeze) button does not work in the Text mode.

To return to the normal screen:

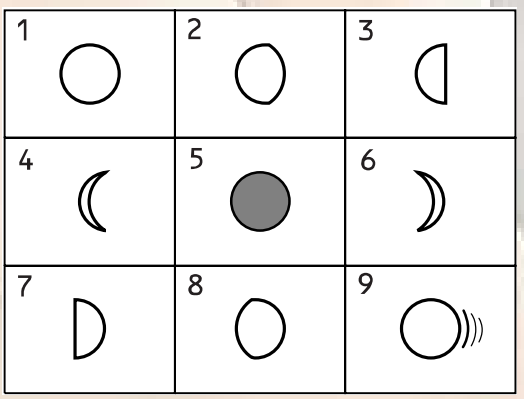
Press the (Freeze) button again or press the number buttons to choose a channel.

- You cannot use the FREEZE button when the sub picture or the main picture are displayed on the screen.
- If the current channel is guarded with the CHANNEL GUARD function and the screen is blue, this button does not work.
- If you press the FREEZE button when receiving the Progressive video signal (525P or 625P signal), "525P" or “625P” appears on the screen and the FREEZE function does not operate.

■ Strobe function
[Except HV-29JH24/HV-29VH14]

You can display eight consecutive still pictures and one moving picture at a time. (They are the pictures of the same source.)

Press the STROBE button.
Eight consecutive still pictures which are captured at intervals of about 0.2 second are displayed in the order of “1” to “9”. (These numbers are not actually displayed.)



- The STROBE button does not work in the Text mode.

To return to the normal screen:

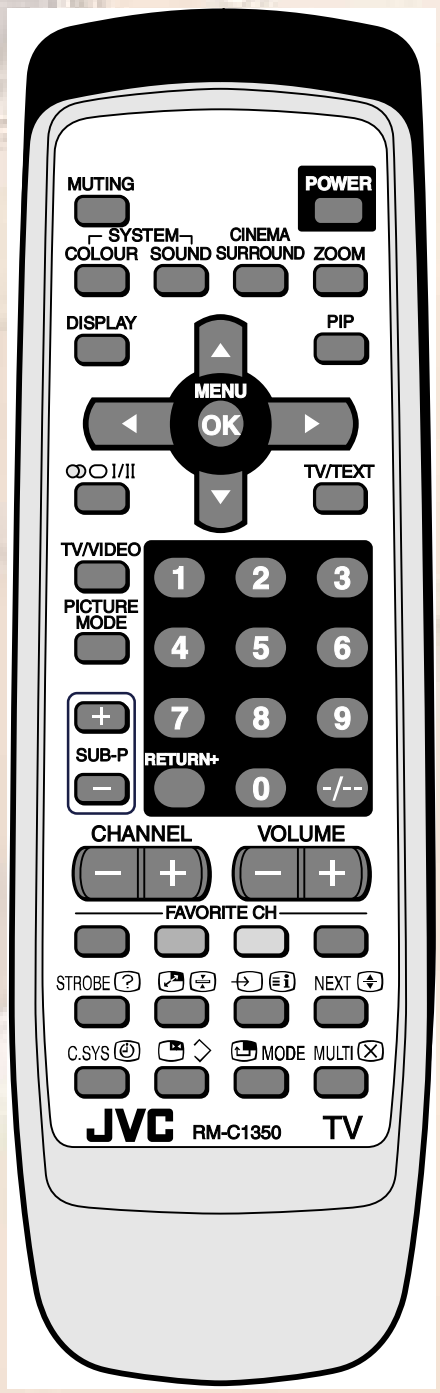
Press the STROBE button again or press the number buttons to choose a channel.

- If signal level of the main picture is weak, the still images become abnormal.
- You cannot use the STROBE button when the sub picture or the main picture are displayed on.
- If the current channel is guarded with the CHANNEL GUARD function and the screen is blue, the STROBE button does not work.
- If you press the STROBE button when receiving the Progressive video signal (525P or 625P signal), "525P" or “625P” appears on the screen and the STROBE function does not operate.

Using the TV's menu

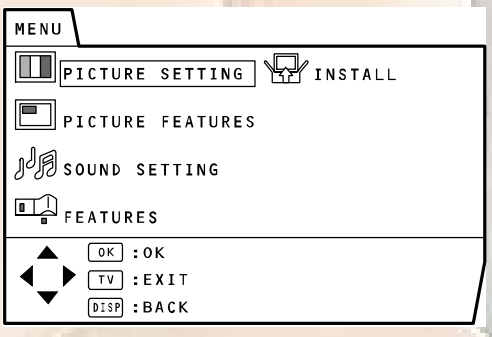
This TV has a number of functions you can operate using menus.
To fully utilize all your TV's functions, you need to understand the basic menu operating techniques fully.

- The following remote control is for HV-29JH74. However, the buttons used for setting TV menus are common to all models.

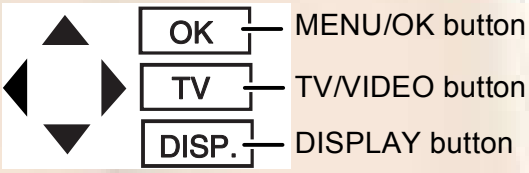


Basic operation

1 Press the MENU/OK button to display the MENU (main menu).



- The display appearing at the bottom of a menu indicates buttons on the remote control you can use when you operate a chosen function.



2 Press the ▼/▲ buttons or ◄/► to choose a menu title, and press the MENU/OK button.
The menu appears.

To return to the previous menu:
Press the DISPLAY button.

To exit a menu instantly:
Press the TV/VIDEO button.

3 Press the ▼/▲ buttons to choose a function.

- For details of the functions in the menus, see the following pages.

4 Press the ◀/▶ buttons to choose the setting of that function.

- If you want to operate a function which appears only with its name, follow the descriptions of that function on the following pages.
- The display appearing at the bottom of a menu shows you a button on the remote control that you can use when you operate a chosen function.

5 Press the MENU/OK button to complete the setting.

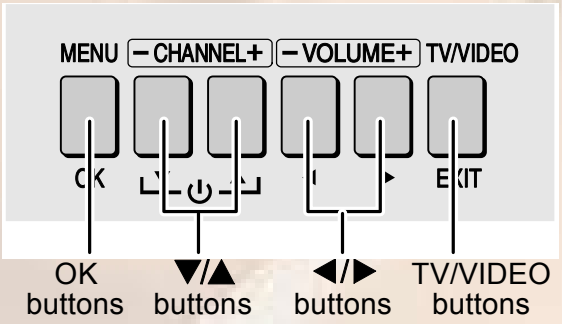
The menu disappears.

- When watching the television with the NTSC system, the menus as displayed at about half of their normal vertical size.

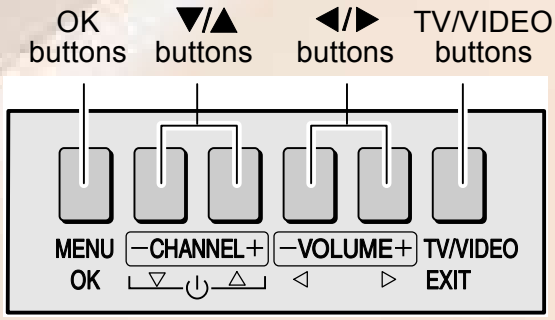
Operation with the buttons on the TV

You can also operate the menus using the buttons on the front panel of the TV.

HV-29JH24/HV-29JH54/HV-29JH74

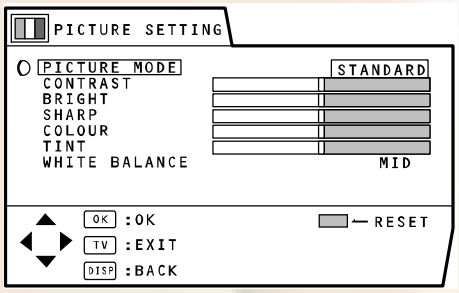


HV-29VH14/HV-29VH54



- There is no DISPLAY button on the front panel of the TV, which will be used for menu operation.

PICTURE SETTING menu



■ PICTURE MODE

You can choose one of three PICTURE MODEs to adjust the picture settings automatically.

BRIGHT:
Heightens contrast and sharpness.

STANDARD:
Standardizes picture adjustment.

SOFT:
Softens contrast and sharpness.

- You can also operate the PICTURE MODE function with the PICTURE MODE button on the remote control. For details, see "PICTURE MODE button" on page 9.

■ Adjusting the picture

You can change the picture settings of each picture mode, as you like. The picture settings changed are stored in the picture mode.

CONTRAST
You can adjust the picture contrast.
◀ : lower
▶ : higher

BRIGHT
You can adjust the picture brightness.
◀ : darker
▶ : brighter

SHARP
You can adjust the picture sharpness.
◀ : softer
▶ : sharper

COLOUR
You can adjust the picture colour.
◄ : lighter
► : deeper

TINT
You can adjust the picture tint.
◄ : reddish
► : greenish

- You can change the TINT setting (picture tint) only when the colour system is NTSC 3.58 or NTSC 4.43.
- You cannot select the TINT function when receiving the Progressive video signal (525P and 625P signals).

To return to the default settings in each PICTURE MODE:
Press the blue button. This will return the picture settings in the currently chosen PICTURE MODE to the default settings, and stores them in the PICTURE MODE again.

■ WHITE BALANCE

You can select one of three WHITE BALANCE modes (three tones of white) to adjust the white balance of the picture. Since white is the colour which is used as a reference for all the other colours, changing the WHITE BALANCE mode affects the appearance of all the other colours on the screen.

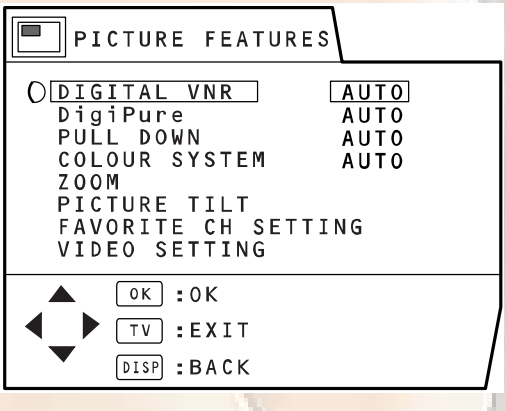
COOL:
A bluish white. Using this mode when watching bright pictures allows you to enjoy a more vivid and bright picture.

MID:
The normal white colour.

WARM:
A radish white. Using this mode when watching films allows you to enjoy colours that are characteristic of films.

- You cannot select the WHITE BALANCE function in the 16:9 mode of the ZOOM function.

PICTURE FEATURES menu



■ DIGITAL VNR

The DIGITAL VNR function cuts down the amount of noise in the original picture.

AUTO:
The TV will be automatically adjust the level of the DIGITAL VNR effect to match the amount of noise in the picture, giving you the best possible picture.

- If you set the DIGITAL VNR effect too high it can make the picture less sharp. It is recommended to use the AUTO setting if you can.

MAX:
The level of the DIGITAL VNR effect is set to the maximum. If you set the DIGITAL VNR function to AUTO but still notice some noise, change the setting from AUTO to MAX.

- The MAX setting is not suitable for high-quality pictures which contain a lot of noise.

OFF:
The level of the DIGITAL VNR effect is set to OFF.

MIN:
The level of the DIGITAL VNR effect is set to the minimum. If you set the DIGITAL VNR function to AUTO but feel that the sharpness of the original picture has not been reproduced fully, change the setting from AUTO to MIN.

- The MIN setting is not suitable for low-quality pictures which contain a lot of noise.

■ DigiPure

The Digipure function uses the latest in digital technology to give you a natural looking picture. The Digipure function includes the following two functions.

Digipure function:
This function helps to create a natural looking picture by eliminating unnecessary edges from high-contrast and crisp images. Conversely, for images with low-contrast, edges are added to produce a sharper, more detailed picture.
You can choose from the DigiPure function settings of AUTO, MIN and MAX.

Picture motion compensation function:
This function displays fast-moving pictures (for example, the players or ball in a football game) more smoothly and naturally on the screen.

AUTO:
The TV will automatically adjust the level of the DigiPure effect to match the amount of noise in the picture, giving the best possible picture.

- If you set the DigiPure effect too high on a low-quality picture that contains a lot of noise, this may actually make the noise worse. It is recommended to use the AUTO setting if you can.

MAX:
The level of the DigiPure effect is set to the maximum. If you set the DigiPure function to AUTO but feel that the original picture quality has not been reproduced fully, change the setting from AUTO to MAX.

- The MAX setting is not suitable for low-quality pictures which contain a lot of noise.

OFF:
The DigiPure function is turned off.

MIN:
The level of the DigiPure effect is set to the minimum. When you set the DigiPure function to AUTO and notice some noise, change the setting from AUTO to MIN.

- The MIN setting is not suitable for high-quality pictures which contain very little noise.

■ PULL DOWN

The PULL DOWN function displays a cinema film picture more smoothly and naturally on the screen.

AUTO:
This function is turned on. Normally keep this function set to AUTO.

ON :
This function is turned on.

OFF:
This function is turned off.

- The motion may appear unnatural when viewing images with the NTSC colour system. To make the motion smoother, switch the PULL DOWN function from AUTO or ON to OFF.
- You cannot select this function in the Twin pictures mode.
- You cannot select this function when receiving the Progressive video signal (525P and 625P signals).

When TV displays Twin, PIP, Multi-display, FREEZE, or STROBE function, PULL DOWN function cannot operate.

■ COLOUR SYSTEM

The colour system is chosen automatically. However, if the picture is not clear or no colour appears, choose the colour system manually.

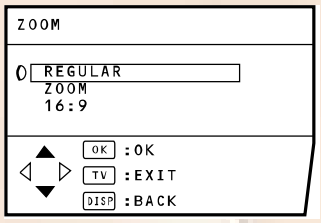
1 Choose COLOUR SYSTEM, then press the ◀/▶ buttons to choose the appropriate colour system.

- You can also operate the COLOUR SYSTEM function with the COLOUR SYSTEM button on the remote control. For details, see "COLOUR SYSTEM button" on page 11.

■ ZOOM

You can change the screen size according to the picture aspect ratio. Choose the optimum one from three ZOOM modes.

1 Choose ZOOM, then press the MENU/OK button.



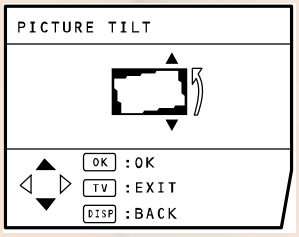
2 Press the ▼/▲ buttons to choose a ZOOM mode. Then press the MENU/OK button.

- You can choose a ZOOM mode from REGULAR, ZOOM or 16:9 modes. For details, see "ZOOM button" on page 9.

■ PICTURE TILT

There are cases where the Earth's magnetic force may make the picture tilt. If this happens, you can correct the picture tilt.

1 Choose PICTURE TILT, then press the MENU/OK button.

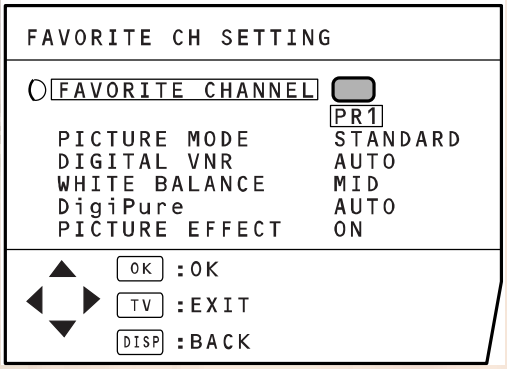


2 Press the ▼/▲ buttons until the picture becomes level. Then press the MENU/OK button.

■ FAVORITE CH SETTING

You can set a dedicated picture effect for the favorite channels registered to the colour buttons (Red, Green, Yellow and Blue). For favorite channel registration, see "Favorite channel registration" on page 12.

1 Choose FAVORITE CH SETTING, then press the MENU/OK button.



2 Press the ▼/▲ button to choose FAVORITE CHANNEL, then press the ◀/▶ button to choose the registered favorite channel.

Each time you press the ◀/▶ button, the colour button icon (Red, Green, Yellow or Blue) of the registered favorite channel and its channel number (e.g. PR1) appear.

3 Set the picture effect.

Press the ▼/▲ button to choose an item listed in the following table and press the ◀/▶ button to choose one of options.

- As explained in the table, if PICTURE EFFECT is set to OFF, the dedicated picture effect for the favorite channel is not used. In this case, normal picture effect is used.
- For details of each item, see "PICTURE MODE" on page 20, "DIGITAL VNR" on page 21, "WHITE BALANCE" on page 21, "DigiPure" on page 22.

Item	Options
PICTURE MODE	BRIGHT*, STANDARD, SOFT
DIGITAL VNR	AUTO*, MAX, OFF, MIN
WHITE BALANCE	COOL, MID*, WARM
DigiPure	AUTO*, MAX, OFF, MIN
PICTURE EFFECT	ON*: Above picture effect applies to the chosen favorite channel. OFF: No picture effect applies.

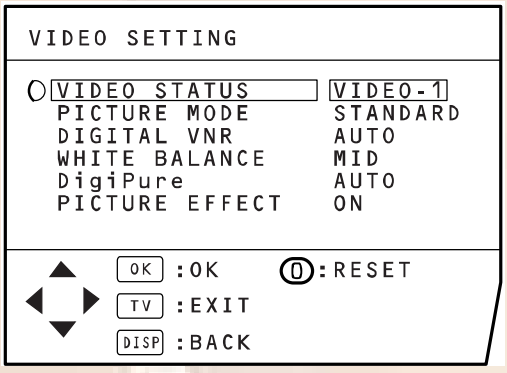
*: When shipped

4 Press the MENU/OK button to complete the setting.

■ VIDEO SETTING

You can set a dedicated picture effect for the video inputs, VIDEO-1 to -4.

1 Choose VIDEO SETTING, then press the MENU/OK button.



2 Press the ▼/▲ button to choose VIDEO STATUS, then press the ◀/▶ button to choose one of video inputs, VIDEO-1 to -4.

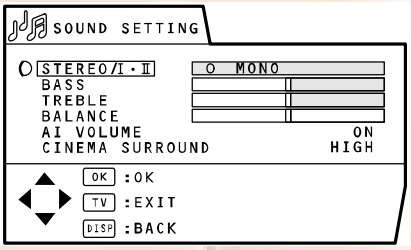
3 Set the picture effect.
Press the ▼/▲ button to choose an item listed in the following table and press the ◄/► button to choose one of options.
- As explained in the table, the PICTURE EFFECT for the video inputs is set to OFF when shipped. To use it, you need to set it ON.

Item	Options
PICTURE MODE	BRIGHT*, STANDARD, SOFT
DIGITAL VNR	AUTO*, MAX, OFF, MIN
WHITE BALANCE	COOL, MID*, WARM
DigiPure	AUTO*, MAX, OFF, MIN
PICTURE EFFECT	ON: Above picture effect applies to the chosen video input. OFF*: No picture effect applies.

*: When shipped
- For details of each item, see "PICTURE MODE" on page 20, "DIGITAL VNR" on page 21, "WHITE BALANCE" on page 21, "DigiPure" on page 22.
- Pressing the number button "0" will return the picture effect to the factory set value.

4 Press the MENU/OK button to complete the setting.

SOUND SETTING menu



■ STEREO / I•II

When you are viewing a bilingual broadcast programme, you can choose the sound from Bilingual I (sub I) or Bilingual II (sub II). When the stereo broadcasting is received poorly, you can change from stereo to mono sound so that you can hear the broadcast more clearly and easily.

∞ :Stereo sound
O : mono sound
I : Bilingual I (sub I)
II : Bilingual II (sub II)
MONO: Cancels the Multi Sound function, and the sound becomes monaural.
- The sound mode you can choose differs depending on the TV programme.
- This function does not work in the VIDEO modes.
- You can also operate the STEREO / I•II function with the ∞OI/II button. For details, see "∞OI/II button" on page 10.

■ Adjusting the sound

You can adjust the sound to your liking.

BASS
You can adjust the low tone of the sound.
◄ : weaker
► : stronger

TREBLE
You can adjust the high tone of the sound.
◄ : weaker
► : stronger

BALANCE
You can adjust the volume balance between the left and right speakers.
◄ : turn the left speaker's volume level up.
► : turn the right speaker's volume level up.

■ AI VOLUME

You can prevent the sudden increase or decrease of sound that occurs when changing the channel to another channel or switching the VIDEO mode to another VIDEO mode.

ON:
This function is turned on.

OFF:
This function is turned off.

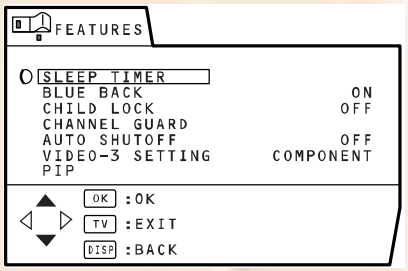
- The AI VOLUME function may not operate as expected if the sound input level from a broadcast station (or video software) is extremely low.

■ CINEMA SURROUND

You can enjoy Surround sound with a "live" effect by using the CINEMA SURROUND function.

- You can choose a CINEMA SURROUND mode from HIGH, LOW, MONO and OFF modes. For details, see "CINEMA SURROUND button" on page 9.
- You can also operate the CINEMA SURROUND function with the CINEMA SURROUND button. For details, see "CINEMA SURROUND button" on page 9.

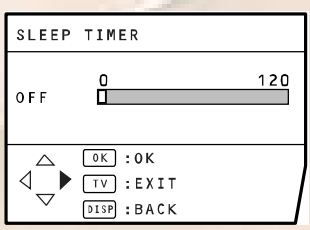
FEATURES menu



■ SLEEP TIMER

You can set the TV to automatically turn off after a set time.

1 Choose SLEEP TIMER, then press the MENU/OK button.



2 Press the ◄/► buttons to set the period of time.
The TV begins count down from the set time.

- You can set the period of time a maximum of 120 minutes (2 hours) in 10 minute steps.

To cancel this function:

- Press the ◄ button to set a period of time to "OFF".

3 Press the MENU/OK button to complete the setting.
The menu disappears.

- One minute before this function turns off the TV, "GOOD NIGHT!" appears.
- This function cannot be used to turn off the TV's main power.
- When this function is on, you can display the SLEEP TIMER menu again to confirm or change the remaining time.

■ BLUE BACK

You can set the TV to automatically change to a blue screen and mute the sound if the signal is weak or absent, or when there is no input from an external device.

ON:
This function is turned on.

OFF:
This function is turned off.

■ CHILD LOCK

You can disable the front control buttons of the TV. When this function is set to ON, the TV can be operated only by using the remote control.
Use this function to prevent children from operating the TV at their own discretion (without parent consent).

ON:
This function is turned on.

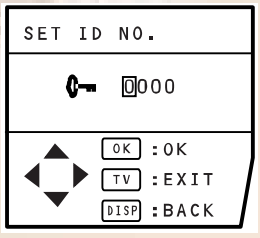
OFF:
This function is turned off.

■ CHANNEL GUARD

When there is a TV channel you do not want your children to watch, you can lock out the channel. Even when a child chooses a programme number for a locked out channel the screen will change to blue and display 🔒 so the channel cannot be viewed.

To set this function:

1 Choose CHANNEL GUARD, then press the number 0 (AV) button.

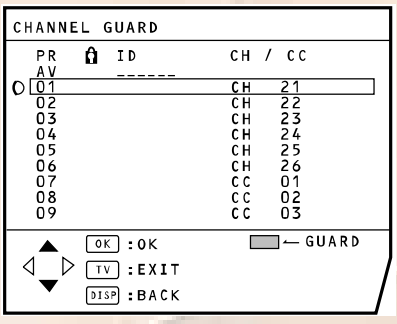


2 Set the ID number you want.

To choose a number:
Press the ▼/▲ buttons.

To move a cursor:
Press the ◄/► buttons.

3 Press the MENU/OK button.



4 Press the ▼/▲ buttons to choose a TV channel.

- The TV shows the TV programme which the chosen TV channel is now broadcasting.

5 Press the blue button to set this function to the TV channel.
🔒 (CHANNEL GUARD) appears and the TV channel is locked.

To cancel this function:
Press the blue button again.
🔒 (CHANNEL GUARD) disappears and the lock is released.

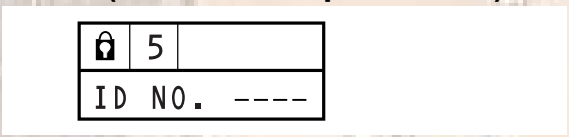
6 Press the MENU/OK button to complete the setting.
The menu disappears.

To view a locked TV channel:

1 Choose a programme number in which a TV channel locked with the number buttons or PR LIST.
The screen changes to blue and the 🔒 (CHANNEL GUARD) appears.

- You cannot choose a locked TV channel with the ▼/▲ buttons.

2 Press the DISPLAY button to display "ID NO." (ID number input screen).



3 Press the number buttons to enter the ID number.
The lock is temporarily released so you can view the TV channel.

If you have forgotten the ID number:
Perform step 1 of "To set this function:" on page 27. After confirming the ID number, press the TV/VIDEO button to exit the menu.

- When you would like to cancel the CHANNEL GUARD function, you must perform the operation "To set this function" again.

■ AUTO SHUTOFF

You can set your TV to turn off if no signal is received for about 15 minutes or longer after the end of a broadcast.

ON:
This function is turned on.

OFF:
This function is turned off.

- The AUTO SHUTOFF function does not turn off the TV's main power.
- The AUTO SHUTOFF will not work for a VIDEO mode.

■ VIDEO-3 SETTING

Set the VIDEO-3 SETTING correctly according to the video signal input from the external device connected to the VIDEO-3 terminal. If this setting is incorrect, images will not be displayed.

VIDEO:
If a normal video signal (composite video signal) is input.

COMPONENT:
If a Component video signal ($Y/C_B/C_R$ signals) is input.

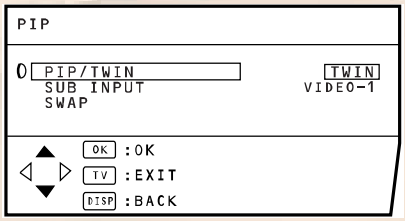
- For detailed connecting methods, see "Additional preparation" on page 35. This Television is compatible with the Progressive video signal (525P signal and 625P signal) only when the component video signal is input.

■ PIP

[Except HV-29JH24/HV-29VH14]
You can enter the Twin or PIP mode from the menu without using the remote control. This menu will be useful if you cannot find the remote control around you.

- For detailed description of Twin and PIP mode, see "Twin and PIP (picture in picture) function" on page 15.

1 Choose PIP, then press the MENU/OK button.



2 Display Twin or PIP picture as you like.
First press the ▼/▲ button to choose an item listed, then press the ◀/▶ button to choose one of options, then press the MENU/OK button.

PIP/TWIN
Each time you press the ◀/▶ button, the screen mode changes as follows:

SUB INPUT
Each time you press the ◀/▶ button, the input source of the sub picture changes as follows:

SWAP
Each time you press the MENU/OK button, the main picture and the sub picture will be swapped.

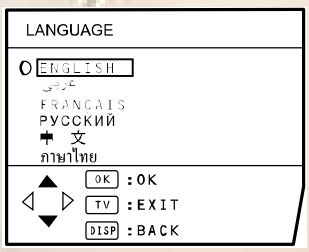
- If PIP/TWIN is selected OFF, then SUB INPUT and SWAP disappears in PIP menu.

INSTALL menu

■ LANGUAGE

You can choose the language you want to use for the on-screen display from the language list in a menu.

1 Choose LANGUAGE, then press the MENU/OK button.



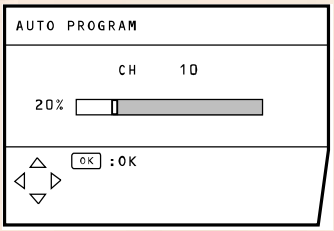
2 Press the ▼/▲ buttons to choose a language.

3 Press the MENU/OK button to complete the setting.
The menu disappears.

■ AUTO PROGRAM

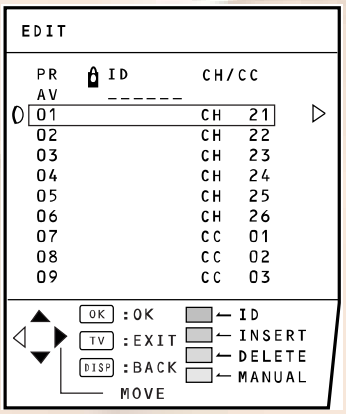
You can automatically register the TV channels which can be received well at your residence in the TV's programme numbers by performing the following.

1 Choose AUTO PROGRAM, then press the MENU/OK button.
The AUTO PROGRAM function starts. The TV channels you receive are automatically stored in the programme numbers list.



- To stop the AUTO PROGRAM function, press the MENU/OK button.

2 After the TV channels have been stored in the programme number list, the EDIT menu appears.



- You can proceed to edit the programme numbers list using the EDIT/MANUAL function. For details, see "EDIT/MANUAL" on page 30.
- If a TV channel you want to view is not stored in the programme numbers list, you can register it using the MANUAL function.
  For details, see "EDIT/MANUAL" on page 30.
- The AUTO PROGRAM function does not store a TV channel to the programme number 0 (AV).
- If you do not need to use the EDIT/MANUAL function, press the MENU/OK button to exit the EDIT menu.

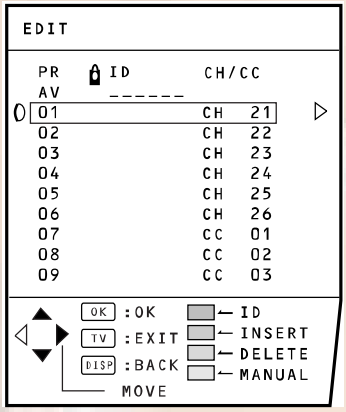
■ EDIT/MANUAL

The EDIT/MANUAL functions are divided into two types: editing of the current programme numbers (EDIT functions) and manual registration of a TV channel you want to view to the programme number (MANUAL function).

CAUTION

- Using the MOVE, DELETE or INSERT function rewrites the current programme numbers list.
  Resultingly, the programme number of some of the TV channels will change.
- When a TV channel which has been locked out using the CHANNEL GUARD function, using the MANUAL function for that TV channel cancels the CHANNEL GUARD function.
- When a TV channel has already been registered in PR 99, using the INSERT function deletes the TV channel.

1 Choose EDIT/MANUAL, then press the MENU/OK button.



2 Follow the operation description of a function you want to use and operate the function.

MOVE:
This function changes a programme number of a TV channel.

ID:
This function registers a Channel name (ID) to a TV channel.

INSERT:
This function adds a new TV channel in the current programme numbers list by using the CH/CC number.

DELETE:
This function deletes an unnecessary TV Channel.

MANUAL:
This function manually registers a new TV channel in a programme number.

3 Press the MENU/OK button to complete the setting.

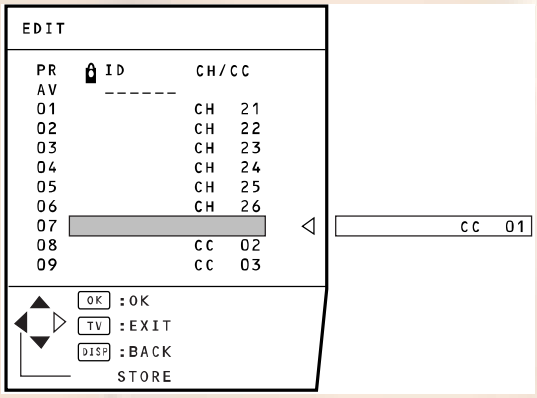
- For programme number PR 0, "AV" appears in the programme numbers list.

FUNCTIONS

MOVE

1 Press the ▼/▲ buttons to choose a TV channel.

2 Press the ▶ button to start the MOVE function.



3 Press the ▼/▲ buttons to choose a new programme number.

To cancel the MOVE function:
Press the DISPLAY button.

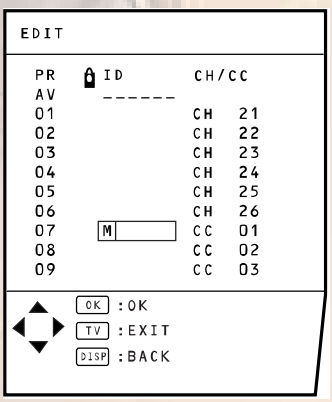
4 Press the ◀ button to change the programme number of a TV channel to a new programme number.

ID

1 Press the ▼/▲ buttons to choose a TV channel.

2 Press the red button to start the ID function.

3 Enter a channel name (ID). Press the ▼/▲ buttons to choose a character. Press the ◀/▶buttons to move the cursor.



To cancel the ID function:
Press the DISPLAY button.

4 Press the MENU/OK button to register a channel name to a TV channel.

DELETE

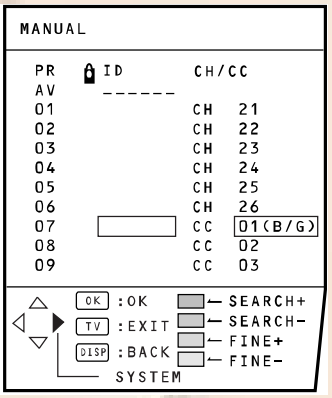
1 Press the ▼/▲ buttons to choose a TV channel.

2 Press the yellow button to delete the TV channel.
The TV channel is deleted from the programme numbers list.

MANUAL

1 Press the ▼/▲ buttons to choose a programme number to which you want to register a new TV channel.

2 Press the blue button to activate the MANUAL function.
At the right side following the CH/CC number, the SYSTEM (sound system) of the TV channel appears.



To cancel the MANUAL function:
Press the DISPLAY button.

3 Press the ▶ button to choose the system (sound system) for a TV channel you want to register.
- For the sound systems in each country or region, see the table "BROADCASTING SYSTEMS" on page 12.

4 Press the green or red button to search for a TV channel.
Scanning stops when the TV finds a TV channel. Then the TV channel is displayed.

5 Press the green or red button repeatedly until the TV channel you want appears.

If the TV channel reception is poor:
Press the blue or yellow button to fine-tune the TV channel.

If you cannot hear the normal sound even when the picture of the TV channel appears normally:
The SYSTEM setting is wrong. Press the ▶ button and choose a SYSTEM that has normal sound.

6 Press the MENU/OK button and register the TV channel to a programme number.
The normal EDIT menu is resumed.

INSERT

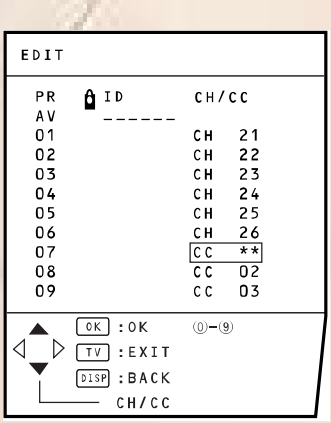
Preparation:

- Find the CH/CC number corresponding to the channel number of the TV channel from page 33.

1 Press the ▼/▲ buttons to choose a programme number for which you will register a new TV channel.

- When you attempt to insert the TV channel of NTSC-M system, press SOUND SYSTEM button to switch SOUND SYSTEM to M, then proceed to the next step.

2 Press the green button to start the INSERT function.



3 Press the ▼/▲ buttons to choose "CC" or "CH" according to the CH/CC number of the TV channel.

To cancel the INSERT function:
Press the DISPLAY button.

4 Press the Number buttons to enter the remaining CH/CC number.
The TV shifts to registration mode. When the registration is completed, the picture of the TV channel appears on the screen.

- The CH/CC number is a number indicating the broadcast frequency to the TV. If the TV cannot detect the TV channel corresponding to the broadcast frequency indicated by the CH/CC number, a picture in the no-signal state appears.

CH/CC number

When you want to use the INSERT function on page 32, find the CH/CC number corresponding to the Channel number of the TV channel from this table.
US: The US channel numbers are the channel numbers used in the United States, Philippines, etc. CCIR: The CCIR channel numbers are the channel numbers used in the Middle East, Southeast Asia, etc. OIRT: The OIRT channel numbers are the channel numbers used in Eastern Europe, Russia, Vietnam, etc. AUSTRALIA: The AUSTRALIA channel numbers are the channel numbers used in Australia, etc.

Channel

CH	US	CCIR	OIRT	AUSTRALIA
CH 02	US-2	E2	R1	AU-0
CH 03	US-3	E3		AU-1
CH 04	US-4	E4	R2	AU-2
CH 05	US-5	E5	R6	AU-6
CH 06	US-6	E6	R7	AU-7
CH 07	US-7	E7	R8	AU-8
CH 08	US-8	E8	R9	AU-9
CH 09	US-9	E9		
CH 10	US-10	E10	R10	AU-10
CH 11	US-11	E11	R11	AU-11
CH 12	US-12	E12	R12	
CH 13	US-13			
CH 14	US-14			
CH 15	US-15			
CH 16	US-16			
CH 17	US-17			
CH 18	US-18			
CH 19	US-19			
CH 20	US-20			
CH 21	US-21	E21		
CH 22	US-22	E22		
CH 23	US-23	E23		
CH 24	US-24	E24		
CH 25	US-25	E25		
CH 26	US-26	E26		
CH 27	US-27	E27		
CH 28	US-28	E28		
CH 29	US-29	E29		
CH 30	US-30	E30		
CH 31	US-31	E31		
CH 32	US-32	E32		
CH 33	US-33	E33		
CH 34	US-34	E34		
CH 35	US-35	E35		
CH 36	US-36	E36		
CH 37	US-37	E37		
CH 38	US-38	E38		
CH 39	US-39	E39		
CH 40	US-40	E40		
CH 41	US-41	E41		
CH 42	US-42	E42		
CH 43	US-43	E43		
CH 44	US-44	E44		
CH 45	US-45	E45		
CH 46	US-46	E46		
CH 47	US-47	E47		
CH 48	US-48	E48		
CH 49	US-49	E49		
CH 50	US-50	E50		
CH 51	US-51	E51		
CH 52	US-52	E52		
CH 53	US-53	E53		
CH 54	US-54	E54		
CH 55	US-55	E55		
CH 56	US-56	E56		
CH 57	US-57	E57		
CH 58	US-58	E58		
CH 59	US-59	E59		
CH 60	US-60	E60		
CH 61	US-61	E61		
CH 62	US-62	E62		
CH 63	US-63	E63		
CH 64	US-64	E64		
CH 65	US-65	E65		
CH 66	US-66	E66		
CH 67	US-67	E67		
CH 68	US-68	E68		
CH 69	US-69	E69		
CH 70				

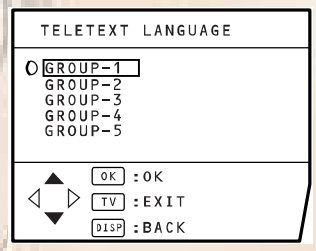
Channel

CC	US	CCIR	OIRT	AUSTRALIA
CC 01		S-1		AU-5
CC 02		S-2		
CC 03		S-3		
CC 04		S-4		
CC 05		S-5		
CC 06		S-6		AU-5A
CC 07		S-7		
CC 08		S-8		
CC 09		S-9		
CC 10		S-10		
CC 11		S-11		
CC 12		S-12		
CC 13		S-13		
CC 14	A	S-14		
CC 15	B	S-15		
CC 16	C	S-16		
CC 17	D	S-17		
CC 18	E	S-18		
CC 19	F	S-19		
CC 20	G	S-20		
CC 21	H	S-21		
CC 22	I	S-22		
CC 23	J	S-23		
CC 24	K	S-24		
CC 25	L	S-25		
CC 26	M	S-26		
CC 27	N	S-27		
CC 28	O	S-28		
CC 29	P	S-29		
CC 30	Q	S-30		
CC 31	R	S-31		
CC 32	S	S-32		
CC 33	T	S-33		
CC 34	U	S-34		
CC 35	V	S-35		
CC 36	W	S-36		
CC 37	W+1	S-37		
CC 38	W+2	S-38		
CC 39	W+3	S-39		
CC 40	W+4	S-40		
CC 41	W+5	S-41		
CC 42	W+6			
CC 43	W+7			
CC 44	W+8			
CC 45	W+9			
CC 46	W+10			
CC 47	W+11			
CC 48	W+12			
CC 49	W+13			
CC 50	W+14			
CC 51	W+15			
CC 52	W+16			
CC 53	W+17			
CC 54	W+18			
CC 55	W+19			
CC 56	W+20			
CC 57	W+21			
CC 58	W+22			
CC 59	W+23			
CC 60	W+24			
CC 61	W+25			
CC 62	W+26			
CC 63	W+27			
CC 64	W+28			
CC 75		X		
CC 76		Y	R3	
CC 77		Z	R4	AU-3
CC 78		Z+1	R5	
CC 79		Z+2		AU-4
CC 95	A-5			
CC 96	A-4			
CC 97	A-3			
CC 98	A-2			
CC 99	A-1			

■ TELETEXT LANGUAGE [Except HV-29JH54/HV-29VH14/ HV-29VH54]

There are five types of teletext language groups. Set the teletext language group that corresponds to the language of the teletext program that you want to watch.

1 Choose TELETEXT LANGUAGE, then press the MENU/OK button.



2 Press the ▼/▲ buttons to choose a group.

Group	Languages
GROUP-1	Turkish, Hungarian, English, German, French, Italian, Spanish, Portuguese, Greek, Swedish, Finnish
GROUP-2	Polish, Serbian, Croatian, Slovenian, Czech, Slovak, Rumanian, Hungarian, German, French, Italian, Swedish, Finnish
GROUP-3	Russian, Bulgarian, Lettish, Lithuanian, Estonian, Ukrainan, Czech, Slovak, English, German, Rumanian
GROUP-4	Arabic, Czech, Slovak. Hungarian, English, German, French, Italian, Spanish, Portuguese, Swedish, Finnish
GROUP-5	Farsi, Czech, Slovak. Hungarian, English, German, French, Italian, Spanish, Portuguese, Swedish, Finnish

3 Press the MENU/OK button to complete the setting.

The menu disappears.

- Languages that are not included in the teletext language group that you select, the sub-titles of the teletext program will not be displayed properly.

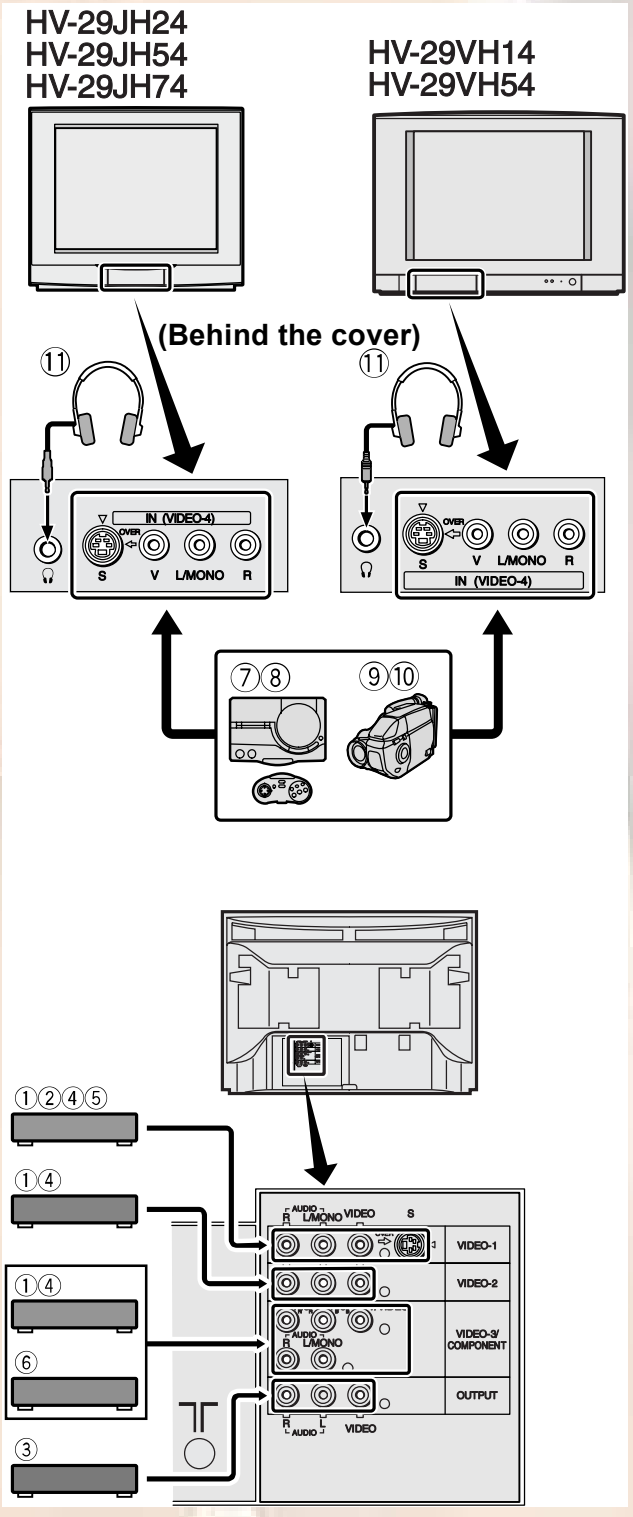
Additional preparation

■ Connecting the external devices

Connect the devices to the TV, paying attention to the following connection diagram.

Before connecting anything:

- Read the manuals provided with the devices. Depending on the devices, the connection method may differ from the figure. In addition, the device settings may be changed depending on the connection method to secure proper operation.
- Turn off all the devices including the TV.
- The “Specifications” on page 40 contains the details of the VIDEO terminals. If you are connecting a device not listed in the following connection diagram, see the “Specifications” to choose the best VIDEO terminal.
- Note that connecting cables are not supplied.



① VCR (composite signal)
② VCR (S-VIDEO signal; Y/C)
③ VCR for recording (composite signal)
④ DVD player (composite signal)
⑤ DVD player (S-VIDEO signal; Y/C)
⑥ DVD player (component video signals; Y. PB/CB . PR/CR)
⑦ TV game (composite signal)
⑧ TV game (S-VIDEO signal; Y/C)
⑨ Camcorder (composite signal)
⑩ Camcorder (S-VIDEO signal; Y/C)
⑪ Headphones

Connecting methods

1 Connect the TV's VIDEO jack and the device's VIDEO OUT (video output) jack with a video cable.

If connecting a device to the TV with an S-VIDEO cable:
Connect the VCR's S-VIDEO OUT (S-VIDEO output) connector and the TV's S connector with an S-VIDEO cable, instead of connecting with a video cable.
Note that the connection with a video cable will be ignored in case you connect a VCR to the TV with both video cable and S-VIDEO cable.

If connecting a DVD player to the TV with a component video cable.
Connect three jacks (Y/VIDEO, CB and CR) in the VIDEO-3 terminal and the DVD player's COMPONENT (component video output) jacks with a component video cables, instead of connection with a video cable. Then set the VIDEO-3 SETTING to COMPONENT, according to"VIDEO-3 SETTING" on page 28.

- This Television is compatible with the Progressive video signal (525P and 625P signals) only when the component video signal is input.
  If you have a DVD player that outputs Progressive video signals (525P and 625P signals) as a component video signal, then by attaching the device to the television with a component video cable you can see the actual images that are recorded on a DVD disc as an original image source.

If connecting a device to the VIDEO-3/ COMPONENT terminal with a video cable.
Connect the TV's Y/VIDEO jack and the device's VIDEO OUT (video output) jack with a video cable.
Then set the VIDEO-3 SETTING to VIDEO according to "VIDEO-3 SETTING" on page 28.

- In the VIDEO-4 terminal, the VIDEO jack is indicated by "V".

2 Connect the TV's AUDIO jacks (L/ MONO and R) and the device's AUDIO OUT (audio L/R output) jacks with an audio cable.

If the device's sound output is in mono:
Connect the device's AUDIO OUT jack and the TV's L/MONO jack with an audio cable.

Connecting devices to the OUTPUT terminal

The signals of the images and sound you are currently viewing with this TV are output through the OUTPUT terminal. By connecting a VCR to the OUTPUT terminal, you can record the currently shown image and sound to that VCR. To do this, connect the VCR and OUTPUT terminal following the steps below.

1 Connect the VIDEO jack in the OUTPUT terminal and the VCR's VIDEO IN (video input) jack with a video cable.

2 Connect the AUDIO jacks (L and R) in the OUTPUT terminal and the VCR's AUDIO IN (audio L/R input) jacks with an audio cable.

- When you turn off the TV, the signals from the OUTPUT terminal are also turned off.
- The component signals input from the VIDEO-3/COMPONENT terminal cannot be output through the OUTPUT terminal.

Connecting Headphones

Connect the headphones with a stereo mini jack (of 3.5 mm in diameter) to the Headphone jack at the TV front panel.

Troubleshooting

If a problem arises while you are using the TV, please read this “Troubleshooting” well before you request having the TV repaired. You may be able to fix it easily by yourself. For example, if the AC plug is disconnected from the AC outlet, or the TV aerial has problems, you may think there is a problem with the TV itself.

Important:

- This Troubleshooting guide only covers problems whose causes are not easy to determine. If a question arise when you are operating a function, read the page(s) corresponding to the operation of the function well, not this Troubleshooting guide.
- After you have followed the Troubleshooting description or the operating description of the functions concerned without any success, remove the AC plug from the AC outlet and request a repair of your TV. Do not attempt to repair the TV by yourself or remove the rear cover of the TV.

■ If you cannot turn on the TV

- Is the AC plug connected to the AC outlet?
- Is the POWER lamp lit? If not, press the Main power button.

■ No picture/No sound

- Have you chosen a TV channel whose reception is extremely bad? In this case, the BLUE BACK function will be activated, the entire screen becomes blue, and the sound is muted. In spite of this, if you want to view the TV channel, follow the description “BLUE BACK” on page 27 to try to change the BLUE BACK function setting to OFF.
- Are your SOUND SYSTEM settings for the TV channels correct?
  Follow the description “SOUND SYSTEM button” on page 11 to try to solve the trouble.

■ Poor picture

- If noise totally obscures the picture (snow), the aerial or aerial cable may have trouble. Check the following to try to solve the trouble:
  Has the TV and aerial been connected properly?
  Has the aerial cable been damaged?
  Is the aerial pointed to the right direction?
  Is the aerial itself faulty?
- If the TV or aerial receives interference from the other devices, stripes or noise may appear in the picture. Move such device as an amplifier, personal computer, or a hair drier that can cause interference away from your TV, or try changing its location. If the aerial suffers interference from a radio tower or high-voltage wire, please contact your local dealer.
- If the TV receives interferences from signal reflecting from mountains or building, double-pictures (ghosting) will occur.
  Try to change the aerial’s direction or replace the antenna with the one with better directionality.
- Are your COLOUR SYSTEM settings for the TV channels correct? Follow the description “COLOUR SYSTEM button” on page 11 to try to solve the trouble.
- Has COLOUR or BRIGHT been controlled properly? Follow the description “Adjusting the picture” on page 20 to try to adjust them properly.
- Videotaping teletext is not recommended because it may not record correctly.

- When a white and bright still image (such as a white dress) is displayed on the screen, the white part may look as if it were coloured.
  It is a phenomenon unavoidable due to the nature of the picture tube itself, and not due to a TV failure.
  When the picture disappears from the screen, the unnatural colours will also disappear.
- When viewing images from commercially available video software products, or videos from videotapes which have been recorded improperly, the top of the image may be distorted. This is due to the condition of the video signal, and not because of malfunction.

■ Poor sound

- Have you adjusted BASS or TREBLE properly? If not, follow the description “Adjusting the sound” on page 25 to try to adjust them properly.
- When the TV channel reception is poor, it can be hard to hear the stereo or bilingual sound. In this case, follow the description “STEREO / I•II” on page 25 to hear the sound more easily by changing it to a mono sound.

■ Operation disabled

- Have the batteries of the remote control become exhausted?
  Follow the description “Putting the batteries into the remote control” on page 4 and replace them with new batteries to try solve the problem.
- Have you attempted to use the remote control at the sides or rear of the TV or at a location more than seven meters apart from the TV location? Operate the remote control in the front of your TV or a location less than seven meters from your TV to try to solve the problem.
- When you are viewing a teletext programme, you cannot operate the menus.
  Press the TV/VIDEO button to return the teletext programme to the ordinary TV programme to try operating the menus.
- Is the CHILD LOCK function set to ON? If the CHILD LOCK function is set to ON, you cannot operate the TV with the front control buttons of the TV. Follow the description “CHILD LOCK” on page 27 to try to set the CHILD LOCK function to OFF.
- If the TV operation becomes disabled suddenly, press the Main power button on the TV and turn off the main power. Try to press the Main power button again to turn on the main power. If the TV returns to a normal state, it is not a failure.
- The following functions do not operate when receiving Progressive video signal (525P and 625P signals).
  Remote control function:
  PIP, MULTI, FREEZE and STROBE button.
  MENU function:
  TINT and PULL DOWN

■ Other concerns

- When the AUTO SHUTOFF function operates, the TV is automatically turned off.
  If the TV is turned off suddenly, try to press the POWER button to turn on the TV once again. At this time, if the TV resumes a normal state, there is no problem.
- If you bring a magnetized device such as a speaker near to your TV, a picture may be warped or unnatural colours appear at the corners of the screen. In this case, keep the device apart from your TV. If the speaker causes such

phenomena, use the magnetic-shielded speaker instead.

- A picture may be tilted due to the influence of the earth's magnetism. In this case, use the "PICTURE TILT" on page 23 to complete the tilt.
- It takes a short period of time from the time an operation such as changing channels is performed until an image is displayed. This is not a malfunction. This is the time required for the image to stabilize before it can be displayed.
- The TV may emit a crackling sound due to a sudden change in temperature. It does not matter if a picture or sound does not show any abnormality. If you hear crackling sounds frequently while you are viewing the TV, other causes may be assumed.
  For precautionary purposes, request your service technician to inspect it.
- Touching the screen may cause you feel a slight electric shock due to its static electricity.
  It is an unavoidable phenomenon due to the construction of the picture tube. It is not a problem with the TV.
  You can rest assured that this static discharge does not have harmful influence over the human body.

Specifications

Broadcasting systems	B, G, I, D, K, K1, M
Colour systems	PAL, SECAM, NTSC3.58/4.43MHz
Channels and frequencies	VHF low channel (VL) =46.25 to 168.25 MHz VHF high channel (VH) =175.25 to 463.25 MHz UHF channel (U) =471.25 to 863.25 MHz • Receives cable channels in mid band (X to Z+2, S1 to S10), super band (S11 to S20) and hyper band (S21 to S41).
Sound-multiplex systems	A2 (B/G), NICAM (B/G, I, D/K) system
Teletext systems	FLOF(Fastext), WST(World Standard Text) [Except HV-29JH54/HV-29VH54/HV-29VH14]
Languages displayed by teletext	Please see the table in the description “TELETEXT LANGUAGE” on page 34. [Except HV-29JH54/HV-29VH54/HV-29VH14]
Power requirements	AC 110 to 240V, 50/60Hz
Audio output	Rated Power output: 10W + 10W
VIDEO-1 terminal	RCA connector × 3, S-VIDEO connector × 1 • Video input, S-VIDEO (Y/C) input and Audio L/R inputs are available.
VIDEO-2 terminal	RCA connector × 3 • Video input and Audio L/R inputs are available.
VIDEO-3/COMPONENT	RCA connector × 5 terminal • Video input/Component video (Y. PB/CB . PR/CR) input and Audio L/R inputs are available. • Progressive video signal (525P and 625P signals) input is available.
VIDEO-4 terminal	RCA connector × 3, S-VIDEO connector × 1 • Video input, S-VIDEO (Y/C) input and Audio L/R inputs are available.
OUTPUT terminal	RCA connector × 3 • Video output and Audio L/R outputs are available.
Headphone jack	Stereo mini-jack (3.5 mm in diameter)
Accessories	Remote control unit × 1 RM-C1350 [HV-29JH74] RM-C1351 [HV-29JH24] RM-C1352 [HV-29VH14] RM-C1353 [HV-29JH54/HV-29VH54] AA/R6 dry cell battery × 2
Speakers	(13cm × 6.5cm) × 2

Design and specifications subject to change without notice.

Pictures displayed on the screen using this TV’s ZOOM functions should not be shown for any commercial or demonstration purpose in public places (cafes, hotels, etc.) without the consent of the owners of copyright of the original picture sources, as this constitutes an infringement of copyright.

JVC

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0704-CR-JMT

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SCHEMATIC DIAGRAMS

COLOUR TELEVISION

HV-29JH24, HV-29JH74/G

CD-ROM No.SML200411

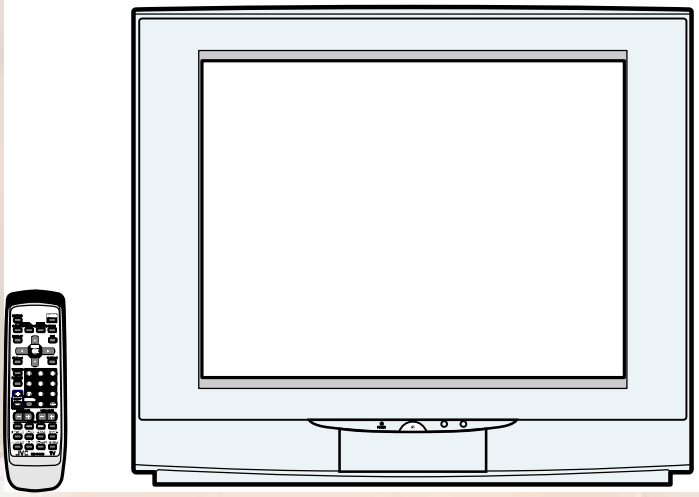
BASIC CHASSIS

ML2

DigiPure

100Hz & PROGRESSIVE SCAN

CINEMA SURROUND



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No.YA164
2004/11

HV-29JH24, HV-29JH74/G

STANDARD CIRCUIT DIAGRAM

■ NOTE ON USING CIRCUIT DIAGRAMS

1.SAFETY

The components identified by the ⚠ symbol and shading are critical for safety. For continued safety replace safety ciritical components only with manufactures recommended parts.

2.SPECIFIED VOLTAGE AND WAVEFORM VALUES

The voltage and waveform values have been measured under the following conditions.

(1)Input signal	: Colour bar signal
(2)Setting positions of each knob/button and variable resistor	: Original setting position when shipped
(3)Internal resistance of tester	: DC 20kΩ/V
(4)Oscilloscope sweeping time	: H ⇒ 20μs / div
	: V ⇒ 5ms / div
	: Othters ⇒ Sweeping time is specified
(5)Voltage values	: All DC voltage values

∗ Since the voltage values of signal circuit vary to some extent according to adjustments, use them as reference values.

3.INDICATION OF PARTS SYMBOL [EXAMPLE]

● In the PW board : R1209 → R209

4.INDICATIONS ON THE CIRCUIT DIAGRAM

(1)Resistors

● Resistance value

No unit	: [Ω]
K	: [kΩ]
M	: [MΩ]

● Rated allowable power

No indication	: 1/16 [W]
Others	: As specified

● Type

No indication	: Carbon resistor
OMR	: Oxide metal film resistor
MFR	: Metal film resistor
MPR	: Metal plate resistor
UNFR	: Uninflammable resistor
FR	: Fusible resistor

∗ Composition resistor 1/2 [W] is specified as 1/2S or Comp.

(2)Capacitors

● Capacitance value

1 or higher	: [pF]
less than 1	: [μF]

● Withstand voltage

No indication	: DC50[V]
Others	: DC withstand voltage [V]
AC indicated	: AC withstand voltage [V]

∗ Electrolytic Capacitors

47/50[Example]: Capacitance value [μF]/withstand voltage[V]

● Type

No indication	: Ceramic capacitor
MM	: Metalized mylar capacitor
PP	: Polypropylene capacitor
MPP	: Metalized polypropylene capacitor
MF	: Metalized film capacitor
TF	: Thin film capacitor
BP	: Bipolar electrolytic capacitor
TAN	: Tantalum capacitor

(3)Coils

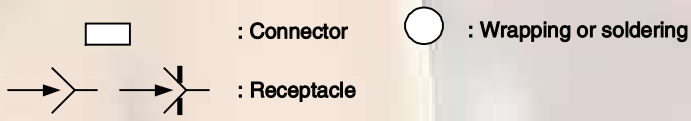
No unit	: [μH]
Others	: As specified

(4)Power Supply

∗ Respective voltage values are indicated

(5)Test point

(6)Connecting method



(7)Ground symbol

⊥ : LIVE side ground

⏚ : ISOLATED(NEUTRAL) side ground

⏚ : EARTH ground

▽ : DIGITAL ground

5.NOTE FOR REPAIRING SERVICE

This model's power circuit is partly different in the GND. The difference of the GND is shown by the LIVE : (⊥) side GND and the ISOLATED(NEUTRAL) : (⏚) side GND. Therefore, care must be taken for the following points.

(1)Do not touch the LIVE side GND or the LIVE side GND and the ISOLATED(NEUTRAL) side GND simultaneously. if the above caution is not respected, an electric shock may be caused. Therefore, make sure that the power cord is surely removed from the receptacle when, for example, the chassis is pulled out.

(2)Do not short between the LIVE side GND and ISOLATED(NEUTRAL) side GND or never measure with a measuring apparatus measure with a measuring apparatus (oscilloscope, etc.) the LIVE side GND and ISOLATED(NEUTRAL) side GND at the same time. If the above precaution is not respected, a fuse or any parts will be broken.

◆ **Since the circuit diagram is a standard one, the circuit and circuit constants may be subject to change for improvement without any notice.**

NOTE

◆ **Due improvement in performance, some part numbers show in the circuit diagram may not agree with those indicated in the part list.**
When ordering parts, please use the numbers that appear in the Parts List.

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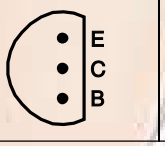
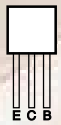
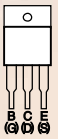
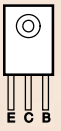
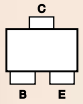
USING P.W. BOARD

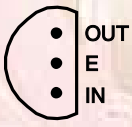
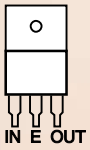
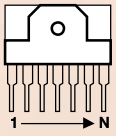
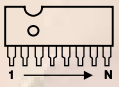
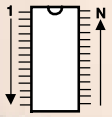
PWB ASS'Y name	HV-29JH24	HV-29JH74/G
MAIN P.W. BOARD	SML-1512A-H2	SML-1513A-H2
POWER & DEF P.W. BOARD	SML-2505A-H2	←
CRT SOCKET P.W. BOARD	SML-3503A-H2	←
FRONT CONTROL P.W. BOARD	SML-8502A-H2	←
AV SW P.W. BOARD	SML0J505A-H2	SML0J506A-H2
MICOM/100HZ P.W. BOARD	SML0Z504A-H2	SML0Z503A-H2
REMOTE CONTROL UNIT	RM-C1351-1H	RM-C1350-2H

SEMICONDUCTOR SHAPES

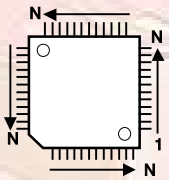
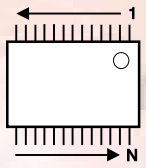
TRANSISTOR

BOTTOM VIEW	FRONT VIEW				TOP VIEW
					CHIP TR 

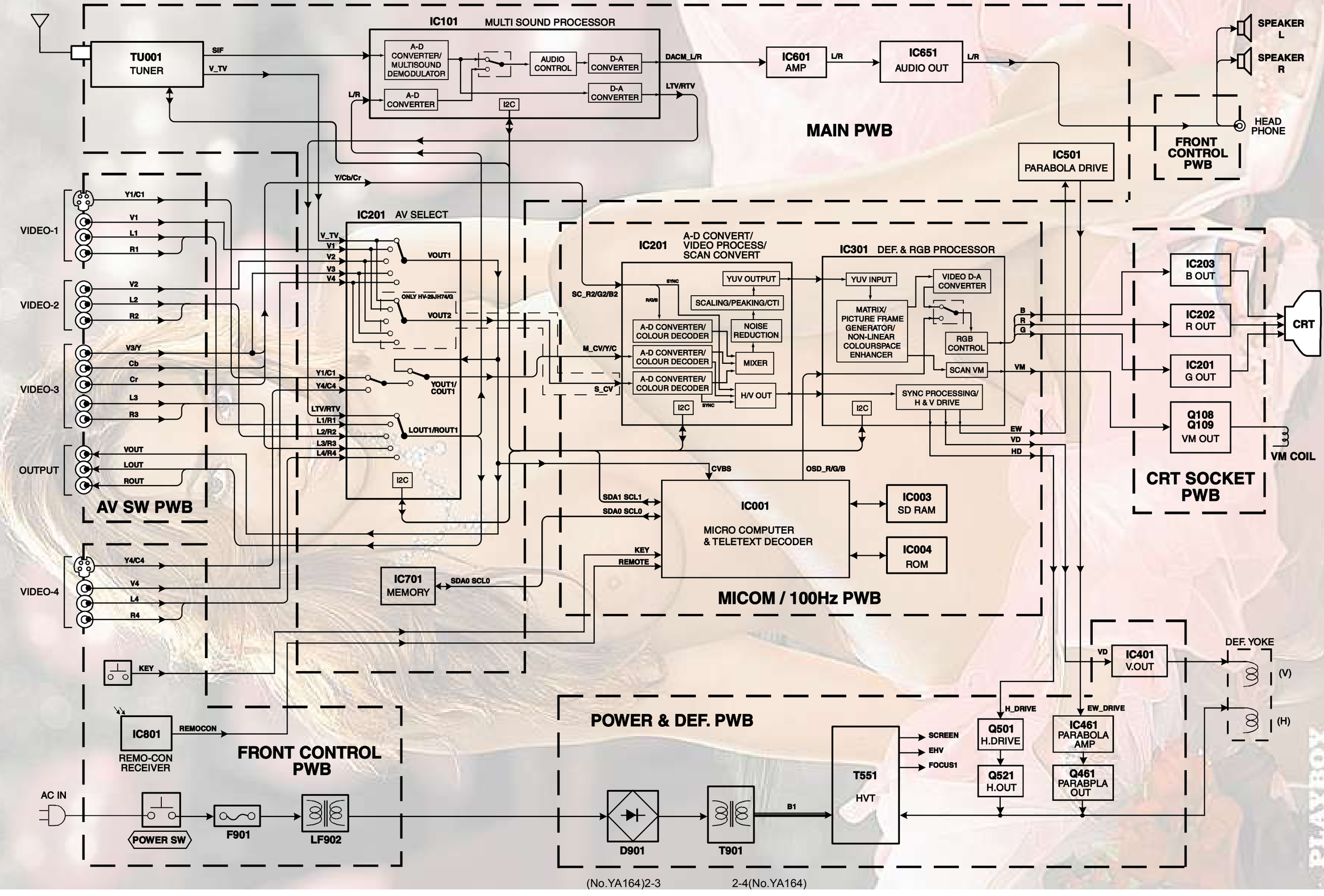
IC

BOTTOM VIEW	FRONT VIEW			TOP VIEW
				

CHIP IC

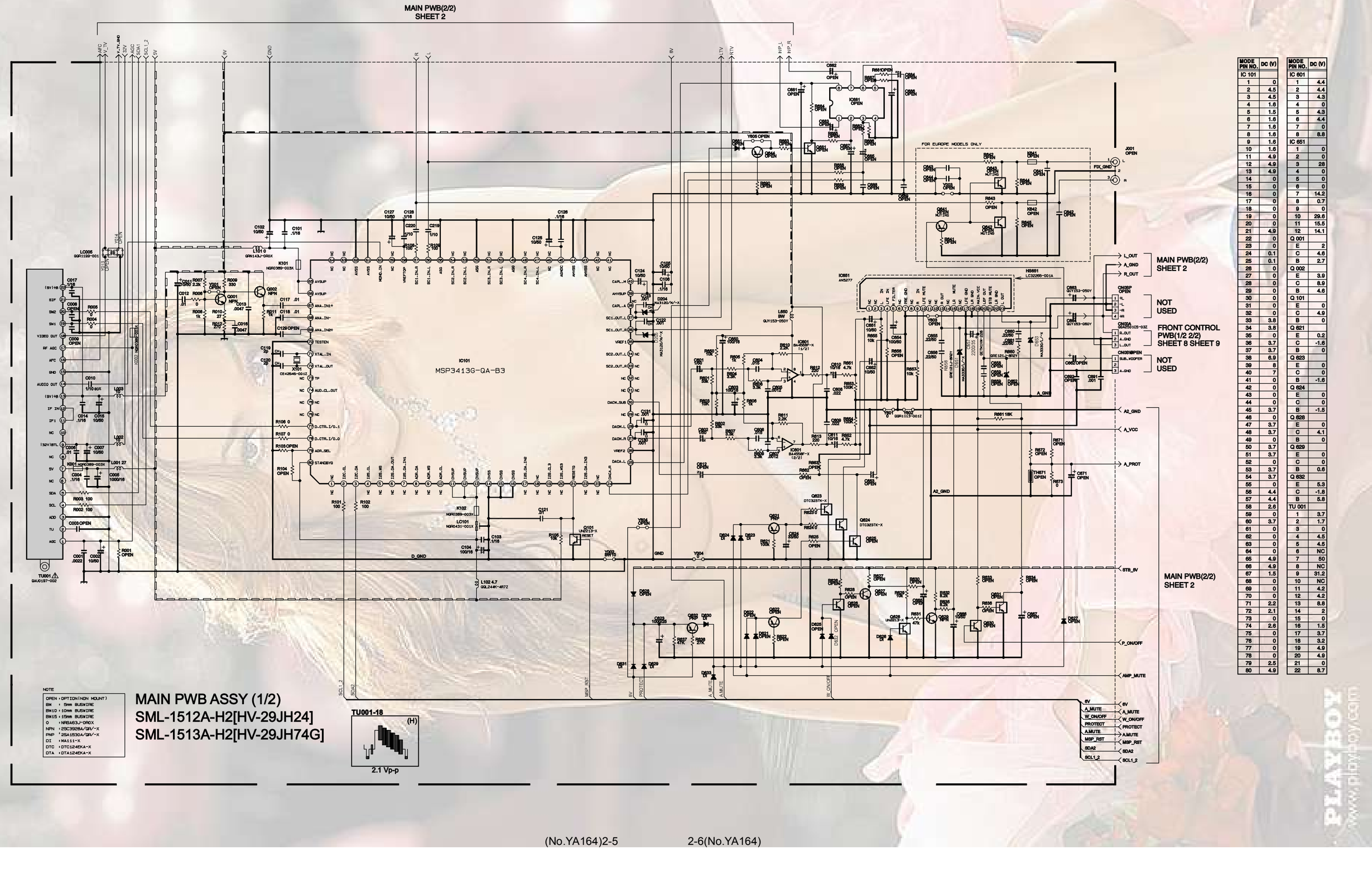
TOP VIEW		
		

BLOCK DIAGRAM



CIRCUIT DIAGRAMS

MAIN PWB CIRCUIT DIAGRAM (1/2) SHEET 1



MODE PIN NO.	DC (V)
IC 101	
1	0
2	4.5
3	4.5
4	1.8
5	1.5
6	1.6
7	1.6
8	1.6
9	1.6
10	1.6
11	4.9
12	4.9
13	4.9
14	0
15	0
16	0
17	0
18	0
19	0
20	0
21	4.9
22	0
23	0
24	0.1
25	0.1
26	0
27	0
28	0
29	0
30	0
31	0
32	0
33	3.6
34	3.6
35	0
36	3.7
37	3.7
38	6.9
39	8
40	7
41	0
42	0
43	0
44	0
45	3.7
46	0
47	3.7
48	3.7
49	0
50	3.7
51	3.7
52	0
53	3.7
54	3.7
55	0
56	4.4
57	4.4
58	2.8
59	0
60	3.7
61	0
62	0
63	0
64	0
65	4.9
66	4.9
67	1.5
68	0
69	0
70	0
71	2.2
72	2.1
73	0
74	2.6
75	0
76	0
77	0
78	0
79	2.5
80	4.9

MODE PIN NO.	DC (V)
IC 601	
1	4.4
2	4.4
3	4.3
4	0
5	4.3
6	4.4
7	0
8	8.8
IC 651	
1	0
2	0
3	28
4	0
5	0
6	0
7	14.2
8	0.7
9	0
10	29.6
11	15.5
12	14.1
Q 001	
E	2
C	4.6
B	2.7
Q 002	
E	3.9
C	8.9
B	4.6
Q 101	
E	0
C	4.9
B	0
Q 621	
E	0.2
C	-1.6
B	0
Q 623	
E	0
C	0
B	-1.5
Q 628	
E	0
C	4.1
B	0
Q 629	
E	0
C	0
B	0.6
Q 632	
E	5.3
C	-1.8
B	5.8
TU 001	
1	3.7
2	1.7
3	0
4	4.5
5	4.5
6	NC
7	50
8	NC
9	31.2
10	NC
11	4.2
12	4.2
13	8.8
14	2
15	0
16	1.5
17	3.7
18	3.2
19	4.9
20	4.9
21	0
22	8.7

NOTE

OPEN	: OPTION(NON MOUNT)
BW	: 5mm BUSWIRE
BW10	: 10mm BUSWIRE
BW15	: 15mm BUSWIRE
0	: NRS463J-0R0X
NPN	: 2SC3928A/GR/-X
PNP	: 2SA1530A/GR/-X
DI	: MA111-X
DTC	: DTC124EKA-X
DTA	: DTA124EKA-X

MAIN PWB ASSY (1/2)
SML-1512A-H2[HV-29JH24]
SML-1513A-H2[HV-29JH74G]

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MAIN PWB CIRCUIT DIAGRAM (2/2) SHEET 2

MAIN PWB(1/2) SHEET 1

MICOM/100Hz PWB(1/2) SHEET 5

MICOM/100Hz PWB(2/2) SHEET 6

NOT USED

FRONT CONTROL PWB SHEET 8

FRONT CONTROL PWB SHEET 8

CRT SOCKET PWB SHEET 4

AV SW PWB SHEET 7

MAIN PWB(1/2) SHEET 1

POWER & DEF PWB SHEET 3

POWER & DEF PWB SHEET 3

MODE PIN NO.	DC (V)
IC 201	
1	3.9
2	4.4
3	3.9
4	4.4
5	4.4
6	6.6
7	0
8	3.9
9	4.4
10	3.9
11	4.4
12	4.4
13	6.6
14	0
15	3.9
16	4.4
17	3.9
18	4.4
19	4.4
20	6.6
21	0
22	4.4
23	4.3
24	4.4
25	0
26	4.4
27	4.5
28	4.4
29	4.3
30	4.4
31	3.5
32	4.4
33	3.5
34	8.9
35	0
36	4.9
37	4.4
38	4.4
39	4.4
40	4.4
41	4.4
42	3.6
43	4.1
44	0
45	4.3
46	4.4
47	3.9
48	4.4
IC 501	
1	5.7
2	0
3	0
4	11.8
5	0
6	0
7	2.8
8	2.2
9	2.3
10	2.3
11	0
12	2.9
13	2.9
14	5.5

MODE PIN NO.	DC (V)
IC 701	
1	0
2	0
3	0
4	0
5	3.3
6	3.3
7	0
8	3.3
IC 901	
1	12
2	8
3	0
IC 902	
1	5
2	0
3	0
4	3.4
5	5.8
6	0
7	5.8
Q 210	
E	0.1
C	-0.4
B	0
Q 211	
E	0
C	0
B	-1.2
Q 214	
E	0
C	0
B	-0.3
Q 216	
E	3.8
C	8.8
B	4.4
Q 217	
E	2.8
C	8.8
B	3.5
Q 305	
E	1
C	5.9
B	1.8
Q 501	
E	0
C	12
B	-1.4
Q 502	
E	1.8
C	4.3
B	2.4
Q 701	
E	5.6
C	0
B	5.8
Q 702	
E	0
C	3.3
B	0

IC201-17 (V) — 40 Vp-p

IC201-23 (H) — 1.1 Vp-p

IC201-33 (H) — 2.2 Vp-p

IC201-40 (H) — 2.2 Vp-p

IC201-43 (H) — 2.2 Vp-p

NOTE

0 : NPSA63J-CR0X
BW : QUY153-050Y
DI : MA111-X
OPEN : NON MOUNT
NPN : 2SC3928A/QR/-X
PNP : 2SA1530A/QR/-X
BH10 : QUY160-100Y

*DIFFERENCE LISTS

*	29LH24A	29LH74GA	29LH54SA	29LH24LA	29LH24AA	29VH14SA	29VH74EA	29MH24EA
	SML-1512A	SML-1513A	SML-1512A	SML-1513A	SML-1524A	SML-1517A	SML-1518A	SML-1519A	SML-1520A	SML-1521A
LC004	OPEN	0	OPEN	0	OPEN	OPEN	OPEN	OPEN	0	OPEN
Y019	OPEN	0	OPEN	0	OPEN	OPEN	OPEN	OPEN	0	OPEN

MAIN PWB ASSY (2/2)
SML-1512A-H2[HV-29JH24]
SML-1513A-H2[HV-29JH74G]

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POWER & DEF PWB CIRCUIT DIAGRAM SHEET 3

MAIN PWB(2/2) SHEET 2

FRONT CONTROL PWB SHEET 8

MODE PIN NO.	DC (V)
IC 401	
1	0
2	-16.2
3	0.2
4	16.1
5	0.6
6	0.6
7	15.4
8	-13.6
9	15.8
10	-13.1
IC 461	
1	3.4
2	1.3
3	2
4	0
5	5.7
6	3.4
7	10.2
8	11.8
IC 901	
1	0.5
2	0
3	30.4
4	18.7
5	2.9
IC 931	
1	-13.9
2	-13.9
3	11.1
4	-13.8
5	-14
6	NC
7	301
8	300
IC 951	
1	140.7
2	10.6
3	0
IC 961	
1	13.1
2	12
3	0
IC 962	
1	12
2	8.9
3	0
PC 901	
1	11.5
2	10.5
3	0
4	2.6
PC 931	
1	3
2	2.4
3	-11.8
4	11.2

MODE PIN NO.	DC (V)
Q 461	
S	0.5
D	16.3
G	10.5
Q 462	
E	0
C	2.1
B	0.4
Q 463	
E	1
C	12
B	0.8
Q 464	
E	2.1
C	0
B	2.6
Q 481	
E	0
C	2.1
B	0
Q 482	
E	0
C	0
B	1.6
Q 501	
S	0
D	39.8
G	1.4
Q 521	
E	0
C	138
B	0
Q 581	
E	140.6
C	0.1
B	140.3
Q 582	
E	0
C	2.1
B	0
Q 941	
E	0
C	0.7
B	0.1
Q 942	
E	0
C	0.3
B	0.7
Q 943	
E	16.2
C	25
B	16.2

LIVE (⊥) ISOLATED (⏚)

POWER & DEF PWB ASSY
SML-2505A-H2[HV-29JH24/74G]

DIFFERENCE PART LIST

*	SML-2505A	SML-2505A	SML-2507A
CN002	OPEN	CH-H2000/QE-65	OPEN
C002	QFZ9072 -684	QFZ9079 -104	QFZ9075 -104
C003	QFZ9072 -684	QFZ9079 -473	QFZ9075 -473
C007	QEJ0371 -397	QEJ0428 -687	QEJ0371 -397
C061	QCZ9079 -102	QCZ9079 -471	QCZ9079 -471
C064	QCZ9079 -471	OPEN	OPEN
Y550	SW10	OPEN	SW10
Y559	SW10	OPEN	SW10

■ NOTE
NPN : KTC3199/YG/-T
PNP : KTA1267/YG/-T
DI : 1SS133-T2
BW : 5mm BUSWIRE
BW10 : 10mm BUSWIRE
BW15 : 15mm BUSWIRE
OPEN : NON MOUNT [OPTION]

IC401-3 (V) 50 Vp-p
IC401-5 (V) 0.5 Vp-p
IC401-6 (V) 30 Vp-p
Q461-D (V) 4.8 Vp-p
Q461-G (H) 12 Vp-p
Q461-S (H) 4 Vp-p
Q463-B (H) 11 Vp-p
Q463-E (H) 10 Vp-p
Q501-D (H) 90 Vp-p
Q501-G (H) 4 Vp-p
Q521-B (H) 2 Vp-p
Q521-C (H) 1300 Vp-p
T551-2 (H) 240 Vp-p
T551-4 (H) 35 Vp-p
T551-6 (H) 140 Vp-p
T551-7 (H) 135 Vp-p
T551-8 (H) 28 Vp-p

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CRT SOCKET PWB ASSY

SML-3503A
SML-3504A

CRT SOCKET PWB ASSY
SML-3503A-H2[HV-29JH24/74G]

NOTE
*1: 2SC3928A/QR/-X
*2: 2SA1530A/QR/-X
*3: MA111-X
BW: QUY160-050Y
BW10: QUY160-100Y
BW15: QUY160-150Y
X: NON-MOUNT(OPEN)

IC203 TDA6111Q B-OUT
IC202 TDA6111Q R-OUT
IC201 TDA6111Q G-OUT
HS203 LC31150-002A
HS202 LC31150-002A
HS201 LC31150-002A
HS101 CEHP00N-001Q
HS102 CEHP00N-001Q
D210 1SR124-400A-T2
D209 1SR124-400A-T2
D208 1SR124-400A-T2
D212 MA8130/H/-X
D213 MA8130/H/-X
D214 MA8130/H/-X
D211 MA8062/M/-X
D215 MTZJ12C-T2
D206 EU01N-T2
D205 EU01N-T2
D204 EU01N-T2
D207 BW15
D101 RH1S-T3
D103 RH1S-T3
D104 RH1S-T3
SK001 QNZ0537-001
SK203 QAF0056-501Z
SK202 QAF0056-501Z
SK201 QAF0056-501Z
K101 CE41492-001Z
K102
K103 CE41492-001Z
K104 CE41832-001
K105 QQR0621-002Z
K106 CE41832-001
K107 CE41832-001
Y304 BW
Y303 BW
Y301 X
Y302 0
TP-47B
TP-E
TP-Y
L203 4.7 QQL244K-4R7Z
L202 4.7 QQL244K-4R7Z
L204 QQL26AJ-102Z
L102 QQL26AK-820Z
L101
R134 1W_FR 560 QRZ9021-561
R231 100K 2W QRL029J-104-M
R230 100K QRL029J-104-M
R229 100K QRL029J-104-M
R426 5.6K
R245 5.6K
R247 5.6K
R225 2.7K
R223 2.7K
R224 2.7K
R426 5.6K
R237 1.5K QRC121K-152Z
R236 1.5K QRC121K-152Z
R235 1.5K
R234 3.3K
R233 3.3K
R232 3.3K
R251 X
R240 BW15
R239 470K QRZ0107-474Z
R421 1M 1/2W
R133 680 2WA OMR
R129 2.7 1/2W
R130 2.7 1/2W
R131 39
R132 120
R128 39
R122 1.2K
R127 1.2K
R125 56K 1/2W
R123 56K 1/2W
R124 47
R126 47
C215 180p
C214 180p
C213 180p
C212 .1 QFKC2EK-104Z
C211 .1 QFKC2EK-104Z
C210 .1 QFKC2EK-104Z
C209 47/25
C208 47/25
C207 47/25
C206 .1 NCF31CZ-104X
C205 .1 NCF31CZ-104X
C204 .1 NCF31CZ-104X
C203 10p
C202 10p
C201 10p
C221 10/250 QETM2EM-106
C219 QCZ0131-222
C218 33/250 QETM2EM-336
C217 X
C220 X
C238 X
C216 100/16
C301 QFLC1HJ-273Z
C302 X
C303 X
C107 100/16
C110 10/160
C111 .0047/500
C112 X
C113 10/160
C114 .0047/500
C115 X
C116 100/10
C117 100/10
C118 330/10
C119 X
C122 X
C123 2200p
C124 100p
C106 3.3/50
C102 X
C103 X
C104 X
C105 X
C108 X
C109 X
C120 2200p
C121 X
Q301 *2 HB DET
Q303 *2
Q302 2SC2412K/QR/-X
Q101 X
Q102 X
Q103 X
Q104 2SC2412K/QR/-X
Q105 KTC3199/YG/-T VM DRIVE
Q106 X
Q107 X
Q108 2SA1837 VM OUT
Q109 2SC4793 VM OUT
Q110 KTA1267/YG/-T VM DRIVE
D301 *3
D302 *3
D303 *3
D304 X
D305 X
D102 *3
D105 0
R301 470K 1/2W
R302 470K 1/2W
R303 22K
R304 22K
R305 5.6K
R306 3.9K
R307 1K
R308 10
R309 X
R310 330
R211 150K
R242 10K
R243 X
R244 1K
R227 10K
R228 2.7K
R207 X
R208 X
R206 680
R205 680
R204 680
R222 180p
R101 X
R102 X
R103 100
R104 X
R105 X
R106 X
R107 X
R108 10 1/2W
R109 12K
R110 X
R111 X
R112 2.7k
R113 X
R114 1.5K
R115 68
R117 390
R118 X
R119 X
R120 X
R121 X
CN00R QJK002-103840
CN00G QJK002-063631
CN0E1
CN0E3
CN0SC
CN0VM WJM0048-002A
SVM_YS 10
SVM_Y 9
PROTECT 8
R 7
G 6
B 5
Ik 4
GND 3
12V 2
GND 1
B1 6
NC 5
HB 4
NC 3
GND 2
HEATER 1
MAIN PWB(2/2) SHEET 2
POWER & DEF PWB SHEET 3
POWERDET
HB
GNDH
HEATER
VM_Y
BK
RK
GK
B
R
G
GND
H
G1
G2
G3
CRT GND
FOCUS
SCREEN
HV
VM COIL
4 : NC
V01
A68QCU770XV1K

MODE PIN NO.	DC (V)
IC 201	
1	3
2	11.9
3	2.8
4	0
5	8.3
6	214
7	131
8	134
9	130
IC 202	
1	3
2	11.9
3	2.8
4	0
5	8.3
6	214
7	133
8	135
9	132
IC 203	
1	3
2	11.9
3	2.8
4	0
5	8.4
6	214
7	131
8	133
9	130
Q 104	
E	1.4
C	6.4
B	2.1
Q 105	
E	6.7
C	11.8
B	7.4
Q 108	
E	129
C	66
B	128.4
Q 109	
E	3.1
C	66.4
B	3.6
Q 110	
E	6.6
C	0
B	6.3
Q 301	
E	4.9
C	0
B	11.9
Q 302	
E	0
C	2.9
B	-1.2
Q 303	
E	0
C	3
B	-1.5

IC201-8 (H) 140 Vp-p
IC202-8 (H) 140 Vp-p
IC203-8 (H) 140 Vp-p

MICOM/100Hz PWB CIRCUIT DIAGRAM (1/2) SHEET 5

MICOM PWB(2/2) SHEET 6

MICOM/100Hz PWB ASSY (1/2) (100Hz)
SML-0Z503A-H2[HV-29JH74G]
SML-0Z504A-H2[HV-29JH24]

MAIN PWB(2/2) SHEET 2

MODE PIN NO.	DC (V)
IC 201	
1	2.1
2	0.6
3	0.1
4	0
5	1.7
6	2.5
7	3.2
8	0
9	2
10	1.8
11	0
12	3.2
13	2.5
14	0
15	1.1
16	1.1
17	0.3
18	0.2
19	0
20	0
21	2.2
22	1.1
23	0
24	1.9
25	3.2
26	0
27	0
28	1.7
29	0
30	1.3
31	1.1
32	1.1
33	0
34	1.7
35	0
36	0
37	0
38	0
39	0.7
40	0.6
41	0.6
42	0
43	0
44	3.3
45	0
46	0
47	0
48	0
49	0
50	1.7
51	0
52	1
53	0
54	0
55	1
56	0.7
57	0
58	0
59	3.3
60	0
61	1.7
62	0.8
63	1.7
64	1.7
65	0
66	1.7
67	0
68	1.7
69	0.3
70	0.5
71	0
72	3.2
73	0
74	1.7
75	2.3
76	0.7
77	0.1
78	1.4
79	0.3
80	0.1

MODE PIN NO.	DC (V)
IC 301	
1	1.1
2	1.8
3	3.2
4	2
5	0.3
6	0
7	0
8	0
9	0
10	0
11	1.4
12	1.4
13	0
14	0
15	3.2
16	0
17	0
18	0
19	0
20	0
21	0
22	0
23	0
24	3.3
25	0
26	0.1
27	0
28	0
29	0
30	0.6
31	0.1
32	0
33	0
34	0
35	0
36	0
37	1.4
38	1.5
39	2.4
40	0
41	4.7
42	4.7
43	4.7
44	4.7
45	0
46	2.3
47	5
48	2.5
49	0
50	0
51	0.2
52	0
53	0.2
54	0
55	0
56	0
57	0
58	0
59	0
60	0
61	0
62	0
63	2.5
64	2.5
65	0
66	0
67	0
68	0
69	0
70	0
71	0
72	0
73	3.2
74	0
75	1.1
76	1.1
77	1.3
78	1.1
79	2.1
80	1.1
IC 901	
1	0
2	0
3	0
4	5.9
5	1.8

MODE PIN NO.	DC (V)
IC 902	
1	0
2	0
3	0
4	0
5	5.8
6	0
7	5.8
IC 903	
1	0
2	0
3	0
4	0
5	6.2
6	0
7	6.2
Q 201	
E	0.6
C	0
B	0
Q 202	
E	0
C	0
B	2.1
Q 203	
E	2.7
C	0
B	2.1
CN002	
1	0
2	0
3	2.3
4	2.3
5	1.5
6	1.5
7	0
8	1.6
9	0
10	2.1
11	2
12	0
13	0
14	0.3
15	0
16	0
17	4.7
18	4.7
19	0
20	0
21	11.8
22	4.8
23	0
24	2.6
25	2.6
26	2.7
27	0
28	1.5
29	0
69	0
70	0
71	0
72	3.6
73	0
74	0
75	0
76	11.8
77	0
78	0
79	4.7
80	4.7
81	0
82	0
83	0
84	4
85	0
86	2.2
87	0
88	0
89	0
90	0.6
91	0
92	0
93	2.9
94	3.4
95	2.9
96	0

	IC201-17	IC201-55	IC201-69	IC201-70	IC301-11	IC301-12	IC301-23	IC301-26	IC301-27	IC301-30	IC301-31	IC301-32	IC301-37	IC301-38	IC301-42	IC301-43	IC301-44
	(H)	(H)	(0.2µs)	(0.2µs)	(0.2µs)	(0.2µs)	(H)	(H)	(V)	(H)	(H)	(V)	(V)	(V)	(H)	(H)	(H)
	3.2 Vp-p	1.2 Vp-p	0.9 Vp-p	0.9 Vp-p	3 Vp-p	2.5 Vp-p	3 Vp-p	2.8 Vp-p	2.9 Vp-p	5.8 Vp-p	2.8 Vp-p	1.2 Vp-p	1.8 Vp-p	1.8 Vp-p	0.4 Vp-p	0.4 Vp-p	0.4 Vp-p

MICOM/100Hz PWB CIRCUIT DIAGRAM (2/2) SHEET 6

MICOM PWB(1/2)
SHEET 5

NOT
USED

MICOM PWB(1/2)
SHEET 5

IC001
SDA5000-B12
MICRO COMPUTER

MAIN PWB(2/2)
SHEET 2

MODE PIN NO.	DC (V)
IC 001	
1	0
2	1
3	0
4	1
5	2.4
6	3.1
7	3.1
8	3.1
9	0
10	0
11	0
12	3.3
13	0
14	3.3
15	0
16	0
17	0
18	0
19	0
20	0
21	2.4
22	0
23	0
24	0
25	0
26	0
27	1.3
28	0.7
29	0
30	2.6
31	0
32	3.3
33	1.3
34	1.3
35	1.3
36	0
37	0
38	2.6
39	3
40	3.1
41	0
42	3.3
43	6.4
44	3.1
45	3.3
46	3.3
47	3.3
48	0
49	0
50	0
51	2.6
52	0
53	3.3
54	0.3
55	0.2
56	2.6
57	0.3
58	0.2
59	0.3
60	0
61	3.3
62	0.3
63	0.3
64	0.3
65	0
66	0
67	0
68	0
69	3.3
70	0
71	0
72	0
73	-
74	3.1
75	3.1
76	1.7
77	0
78	0
79	0.1
80	0
81	2.3
82	0
83	2.3
84	0
85	3.3
86	0
87	2.4
88	0
89	2.23
90	0
91	0
92	0
93	3
94	3
95	2.4
96	3.3

MODE PIN NO.	DC (V)
97	0
98	2.5
99	2.5
100	0
101	0
102	3.2
103	3.3
104	0
105	0
106	3.3
107	0
108	0
109	0.4
110	0
111	0
112	0
113	0
114	0
115	0
116	0
117	0
118	0
119	0
120	-
121	0
122	0
123	0
124	0
125	0
126	0
127	-
128	-
IC 003	
1	3.2
2	0
3	3.2
4	0
5	0
6	0
7	0
8	0
9	3.3
10	0
11	0
12	0
13	0
14	3.3
15	0
16	3.2
17	3.1
18	3
19	3.1
20	2.6
21	2.6
22	0.7
23	0
24	0
25	1.3
26	1.3
27	3.3
28	0
29	1.3
30	0
31	1.3
32	1.3
33	0
34	0
35	0
36	0
37	3.3
38	0
39	0
40	0
41	0
42	0
43	0
44	0
45	0
46	0
47	0.1
48	0
49	3.2
50	0
51	3
52	0
53	3
54	0
IC 191	
1	4.8
2	0
3	1.2
4	2.4
5	3.3
Q 013	
S	2.5
D	4.4
G	3.3

MODE PIN NO.	DC (V)
Q 014	
S	2.5
D	0
G	3.3
CN002	
30	0
31	3.2
32	3.2
33	0
34	0
35	0
36	3.3
37	0
38	0
39	4.4
40	4.5
41	3.3
42	3.3
43	3.3
44	2.2
45	0
46	0
47	5
48	5.5
49	3.2
50	0.1
51	0
52	0
53	3.3
54	3.3
55	3.3
56	3.3
57	0
58	4.5
59	4.5
60	0
61	3.3
62	0.1
63	0
64	0
65	0.8
66	3.7
67	0
68	0

IC001-102 (H) — 3.1 Vp-p

IC001-103 (H) — 0.15 Vp-p

IC001-108 (0.2µs) — 1.2 Vp-p

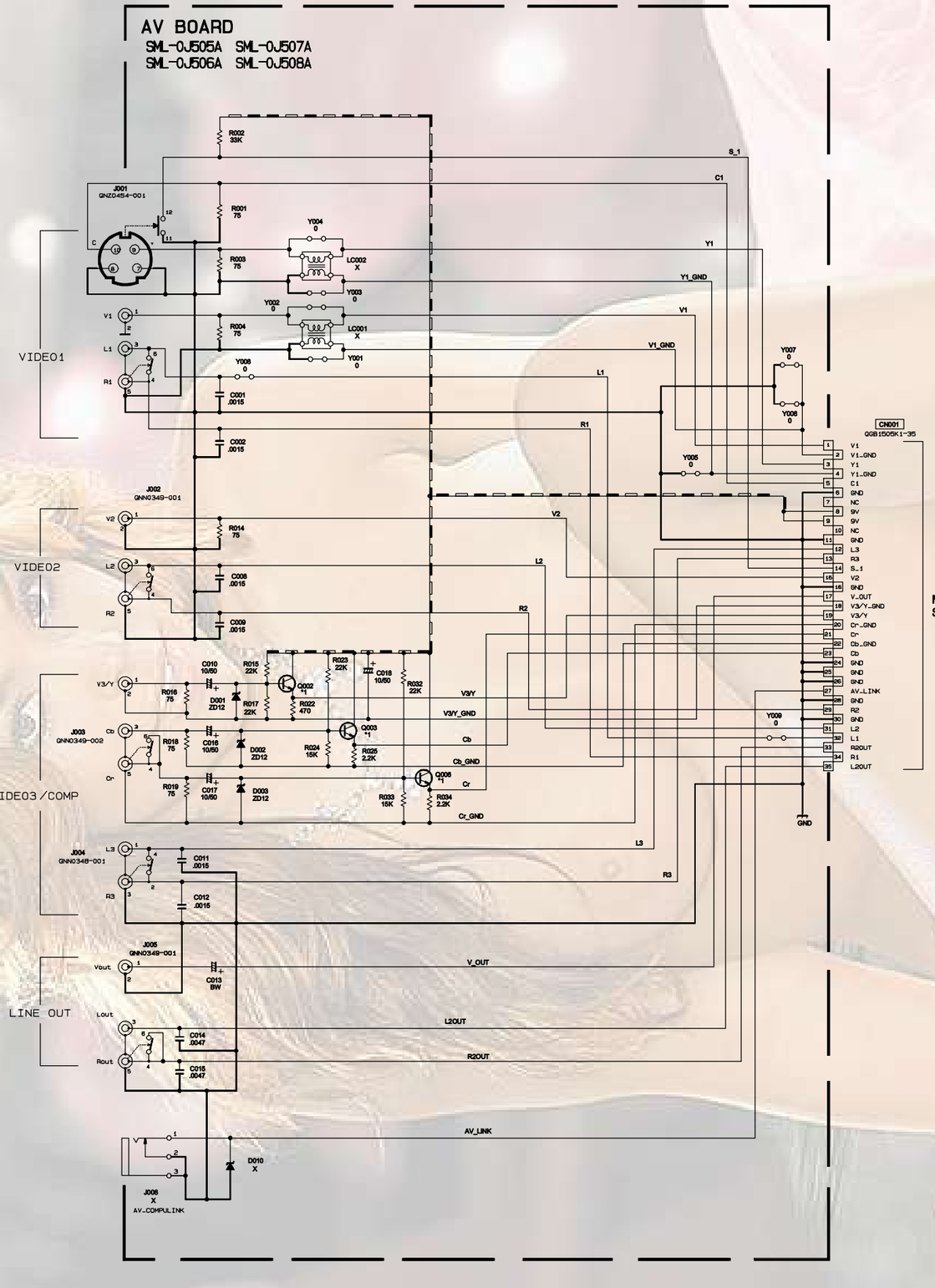
IC001-109 (0.2µs) — 1.2 Vp-p

NOTE
NPN: 2SC3928A/GR/-X
PNP: 2SA1503A/GR/-X
DI : MA111-X
NRZ: NRZ0040-0R0X
0: CHIP BUS WIRE

MICOM/100Hz PWB ASSY (2/2) (MICOM)
SML-0Z503A-H2[HV-29JH74G]
SML-0Z504A-H2[HV-29JH24]

PLAYBOY www.playboy.com

AV SW PWB CIRCUIT DIAGRAM SHEET 7



MODE PIN NO.	DC (V)
Q002	
E	3.4
C	8.8
B	4.1
Q003	
E	2.9
C	8.8
B	3.5
Q006	
E	2.9
C	8.8
B	3.5

NOTE

X : OPTION(NON MOUNT)
BW : QUY16G-050Y
O : NRSA63J-ORDX
*1 : 2SD2412K/QR/-X
ZD12 : MA3120/M/-X

AV SW PWB ASSY
SML-0J505A-H2[HV-29JH24]
SML-0J506A-H2[HV-29JH74G]

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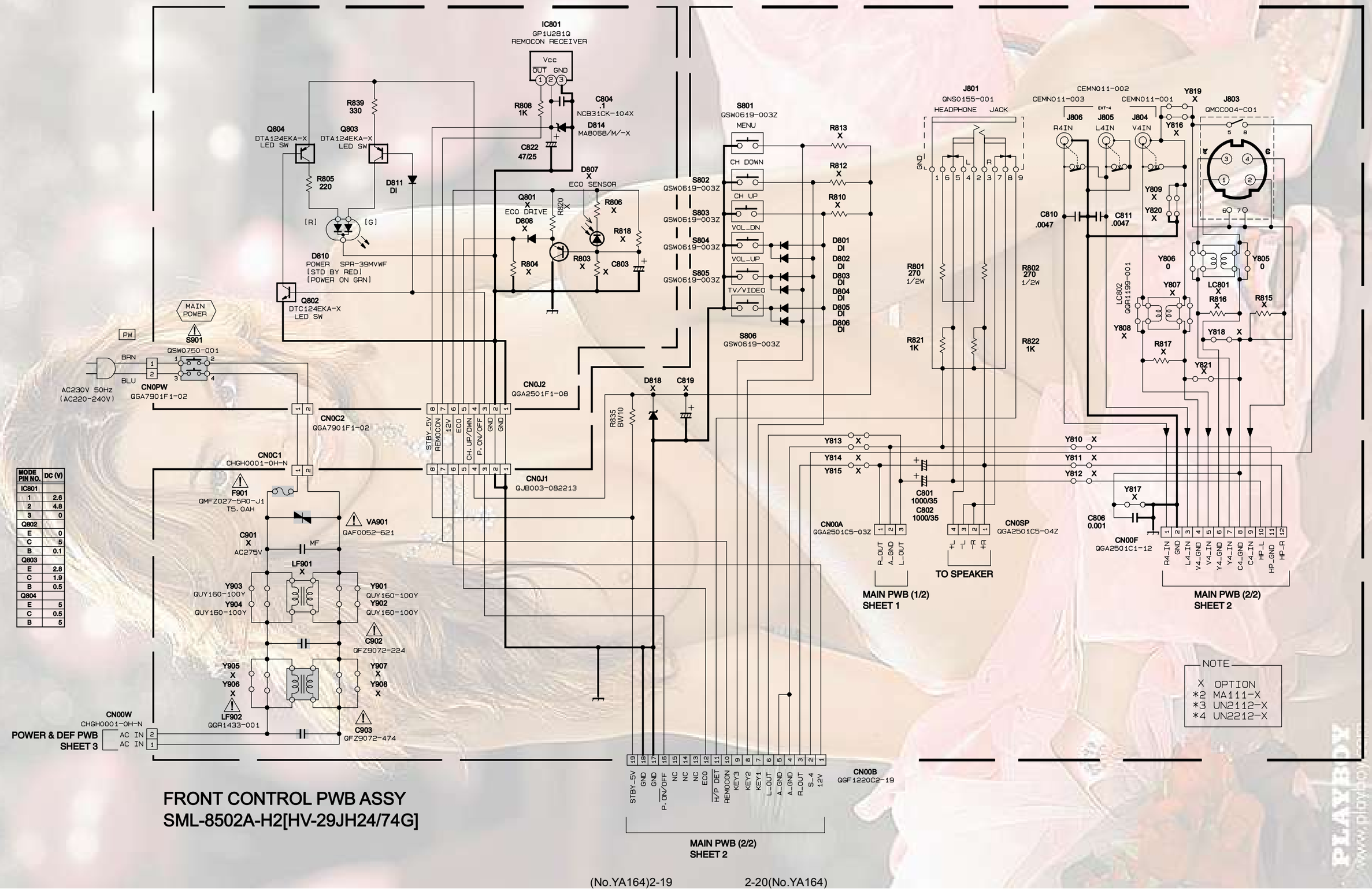
FRONT CONTROL PWB CIRCUIT DIAGRAM SHEET 8

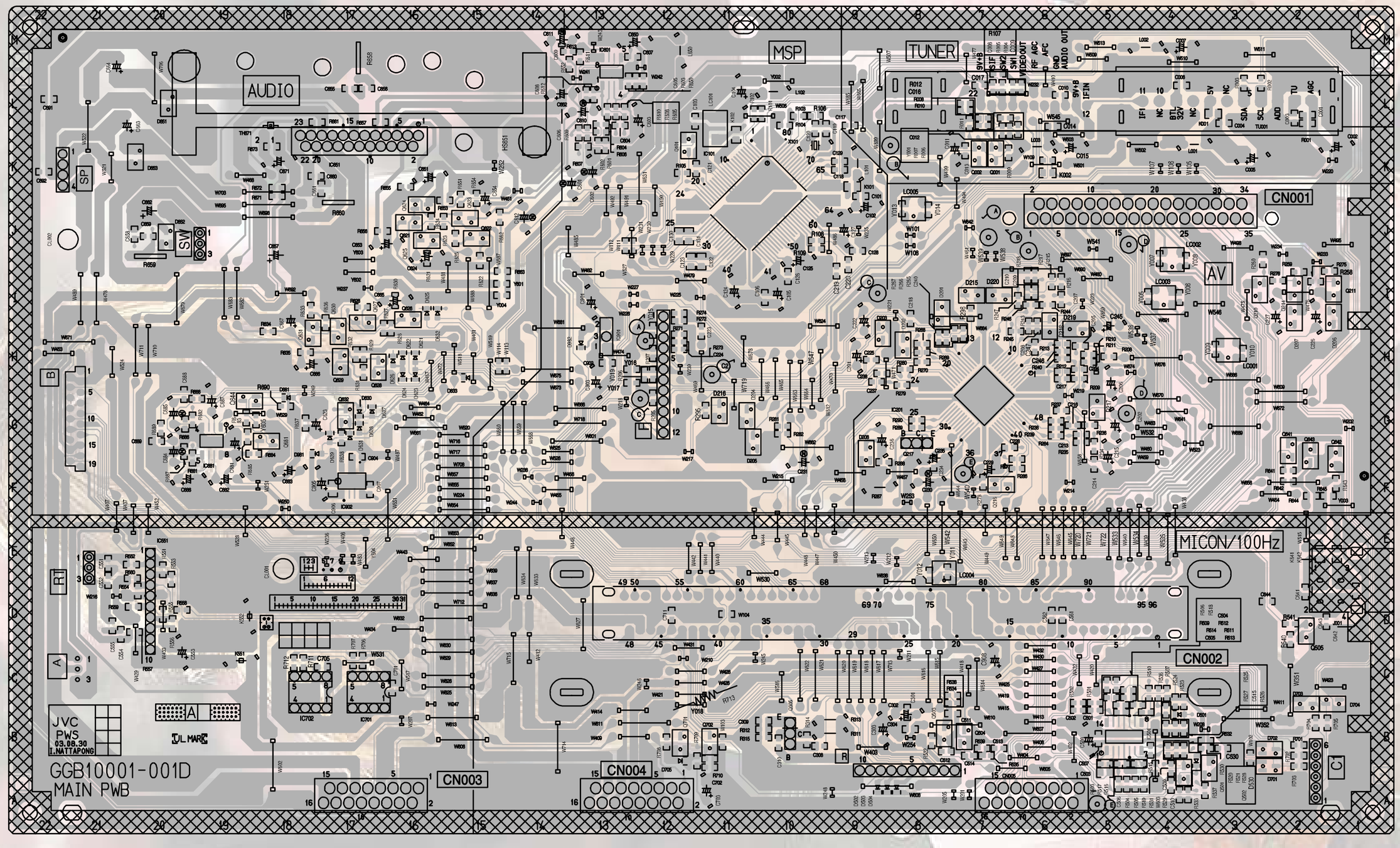


MODE PIN NO.	DC (V)
IC801	
1	2.6
2	4.8
3	0
Q802	
E	0
C	5
B	0.1
Q803	
E	2.8
C	1.9
B	0.5
Q804	
E	5
C	0.5
B	5

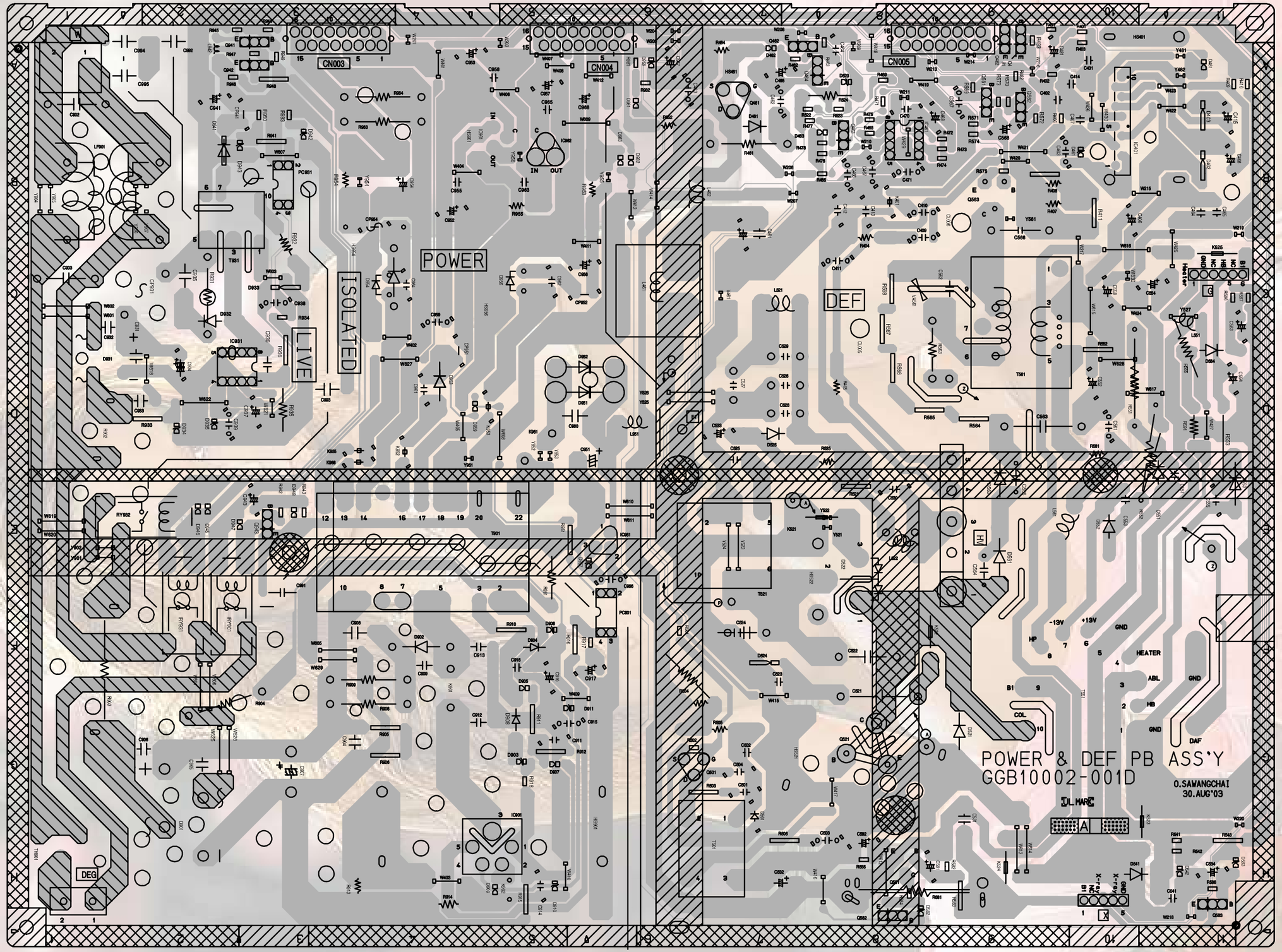
FRONT CONTROL PWB ASSY
SML-8502A-H2[HV-29JH24/74G]

PATTERN DIAGRAMS

MAIN PWB PATTERN



POWER & DEF PWB PATTERN



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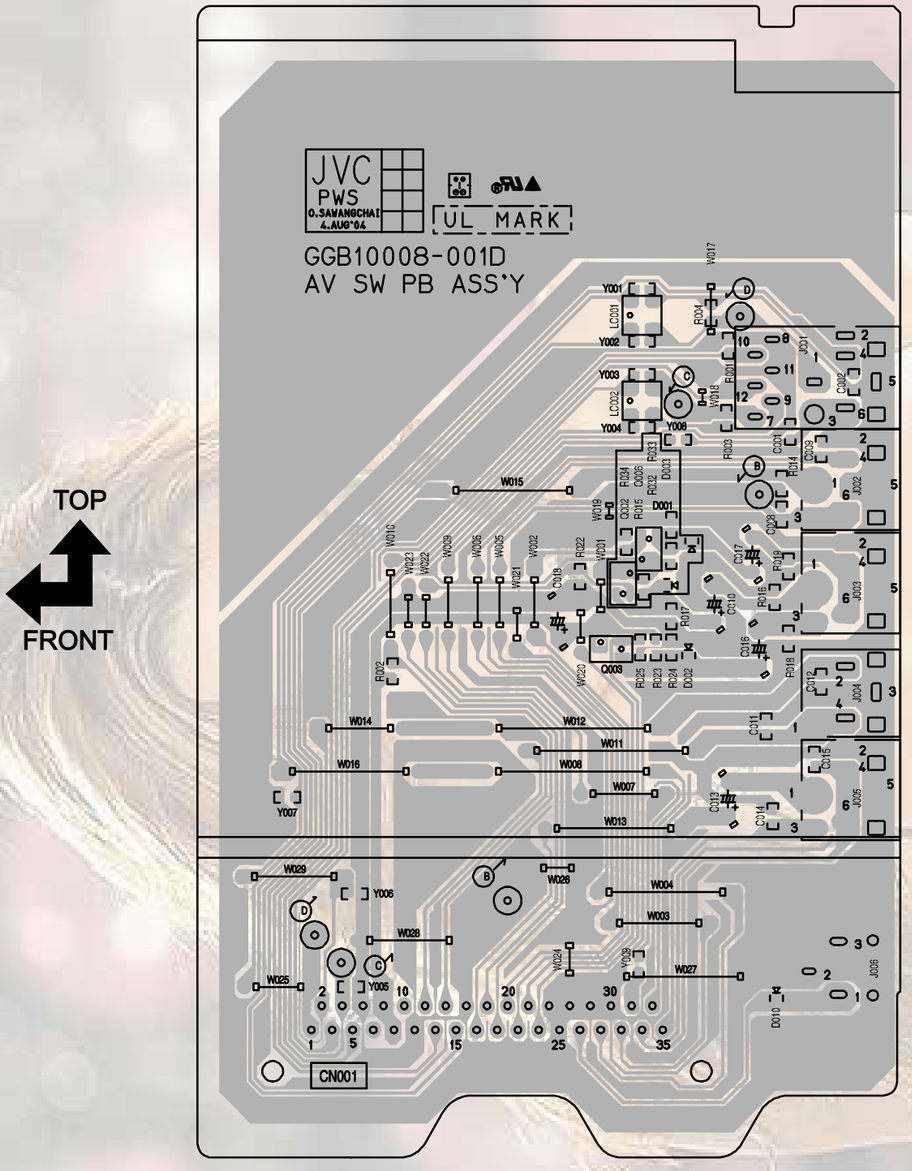
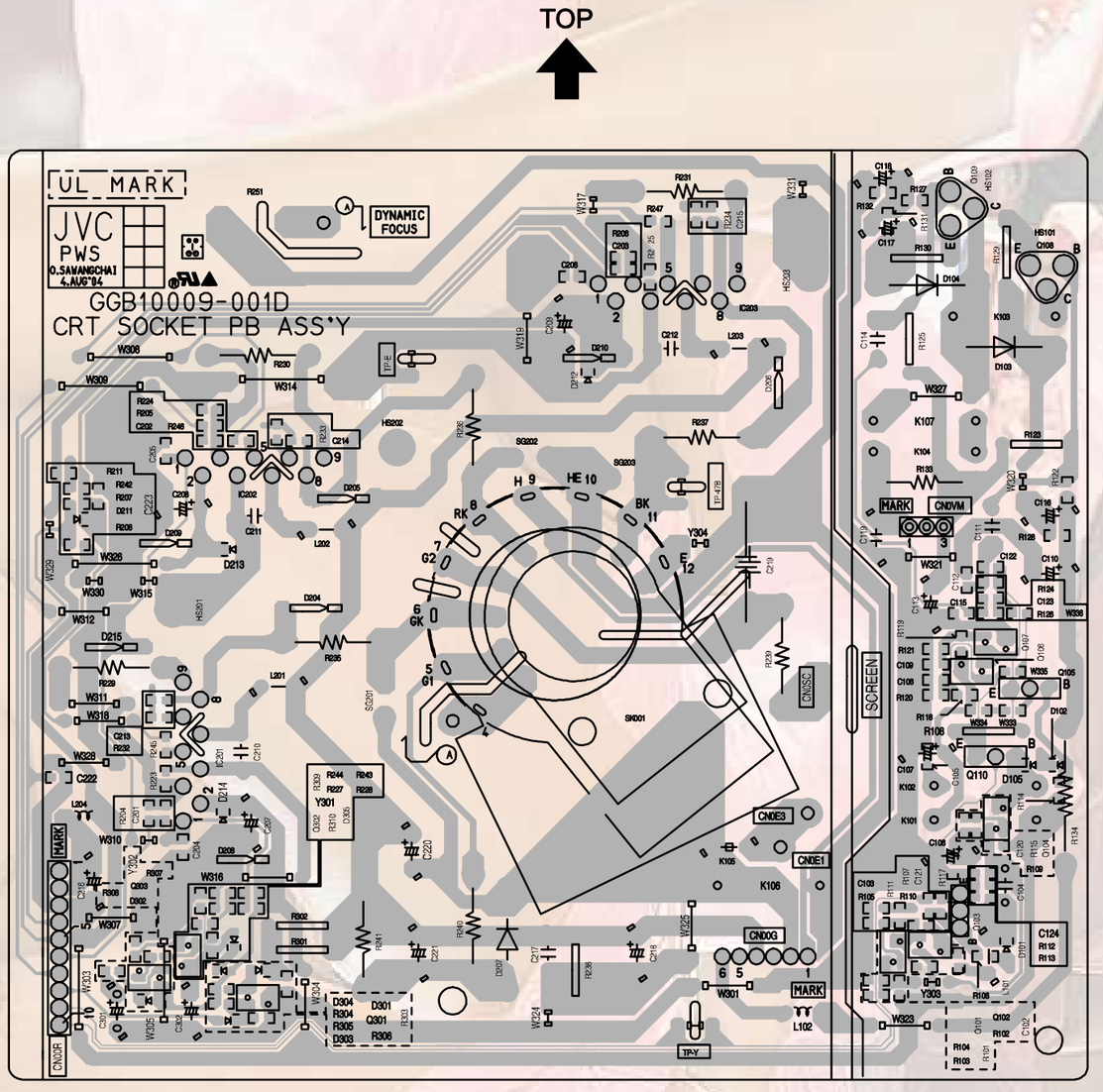
AV SW PWB PATTERN



CRT SOCKET PWB PATTERN



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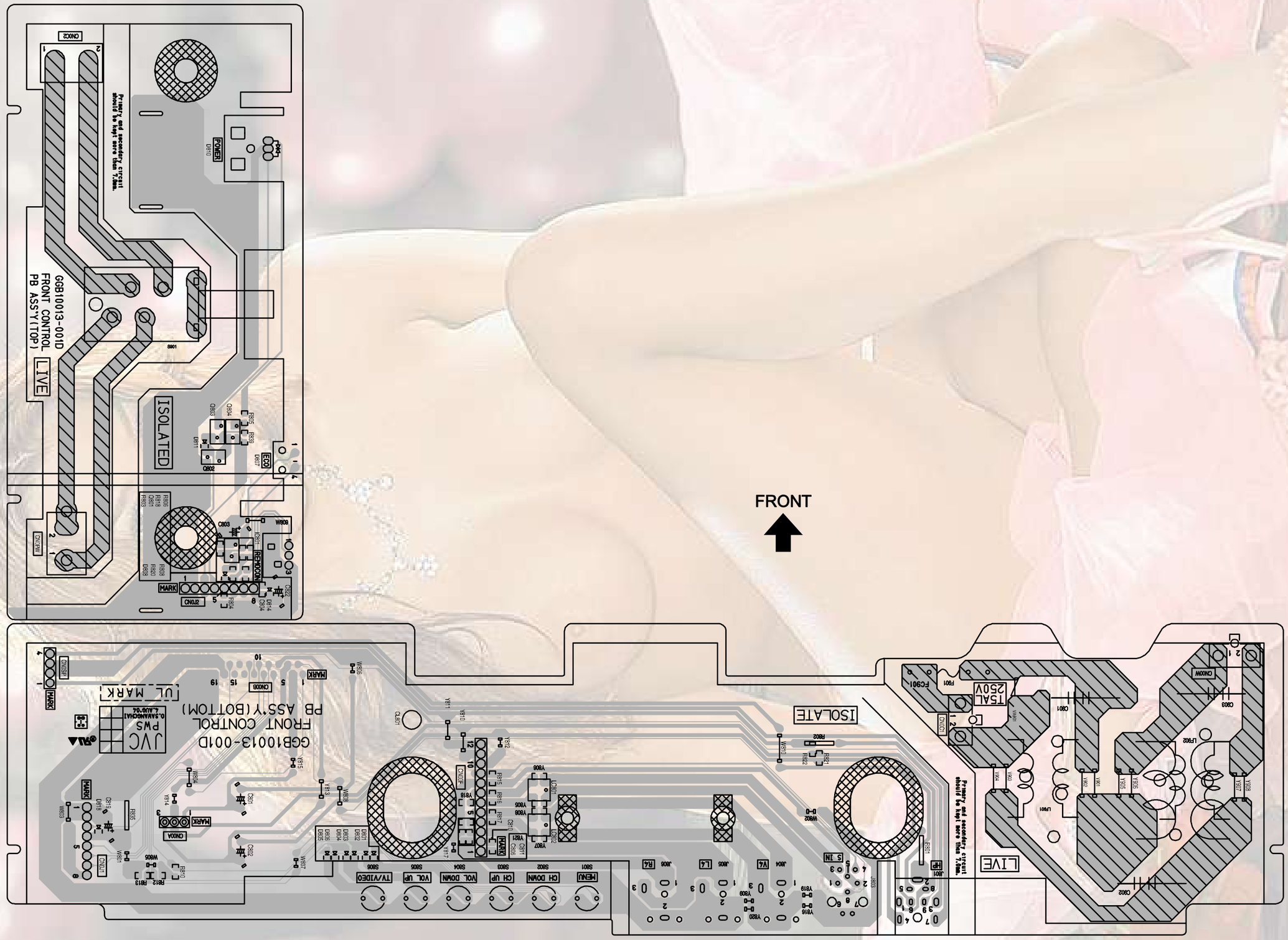
FRONT CONTROL PWB PATTERN



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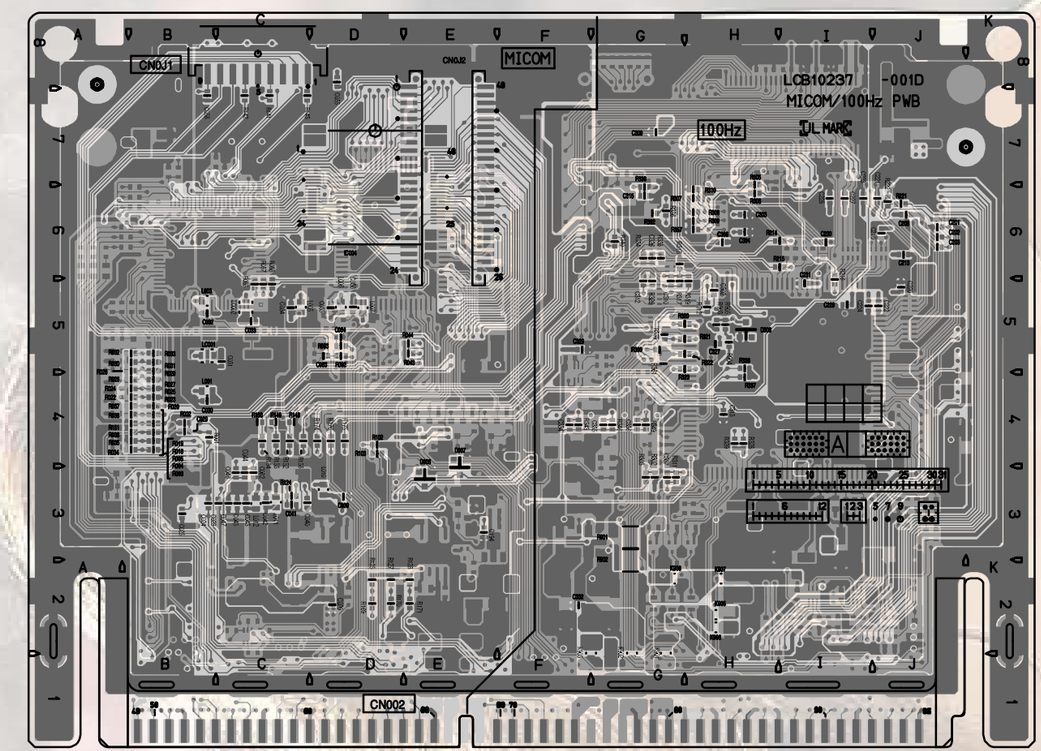
MICOM/100Hz PWB PATTERN [SOLDER SIDE]

TOP

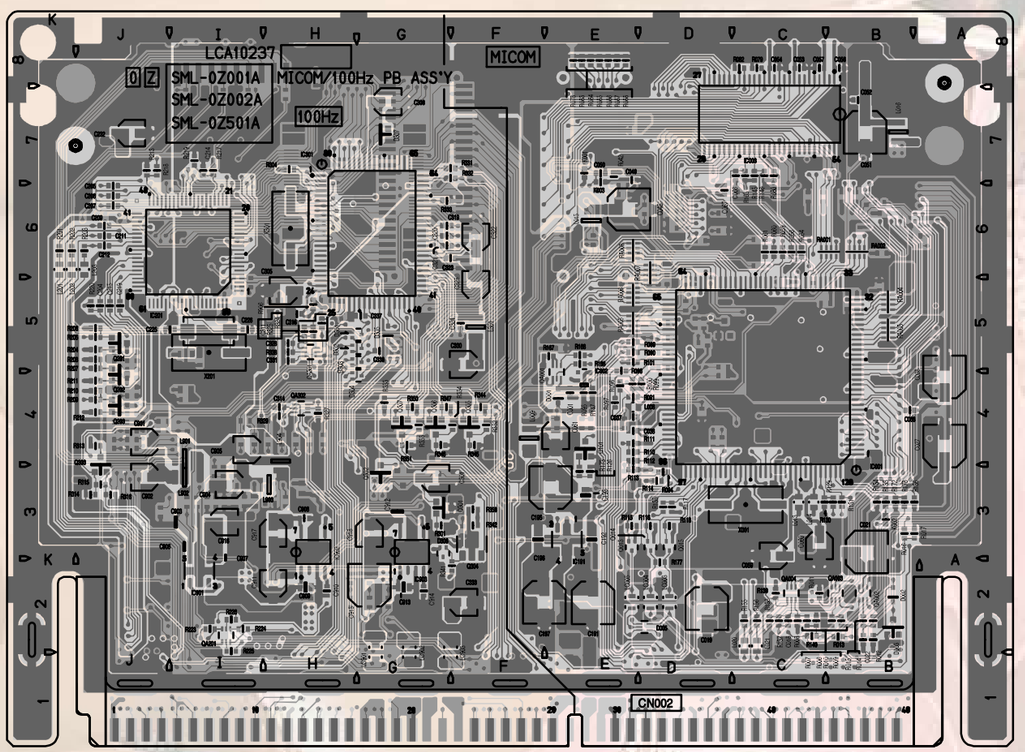
FRONT



MICOM/100Hz PWB PATTERN [PARTS SIDE]

TOP

FRONT



JVC

Victor Company of Japan, Limited
AV & MULTIMEDIA COMPANY VIDEO DISPLAY CATEGORY 12, 3-chome, Moriya-cho, kanagawa-ku, Yokohama, kanagawa-prefecture, 221-8528, Japan

(No.YA164)

Printed in Japan
VPT

PARTS LIST

CAUTION

- The parts identified by the ⚠ symbol are important for the safety . Whenever replacing these parts, be sure to use specified ones to secure the safety.
- The parts not indicated in this Parts List and those which are filled with lines --- in the Parts No. columns will not be supplied.
- P.W. BOARD Ass'y will not be supplied, but those which are filled with the Parts No. in the Parts No. columns will be supplied.

ABBREVIATIONS OF RESISTORS, CAPACITORS AND TOLERANCES

RESISTORS		CAPACITORS	
CR	Carbon Resistor	C CAP.	Ceramic Capacitor
FR	Fusible Resistor	E CAP.	Electrolytic Capacitor
PR	Plate Resistor	M CAP.	Mylar Capacitor
VR	Variable Resistor	CH CAP.	Chip Capacitor
HV R	High Voltage Resistor	HV CAP.	High Voltage Capacitor
MF R	Metal Film Resistor	MF CAP.	Metalized Film Capacitor
MG R	Metal Glazed Resistor	MM CAP.	Metalized Mylar Capacitor
MP R	Metal Plate Resistor	MP CAP.	Metalized Polystyrol Capacitor
OM R	Metal Oxide Film Resistor	PP CAP.	Polypropylene Capacitor
CMF R	Coating Metal Film Resistor	PS CAP.	Polystyrol Capacitor
UNF R	Non-Flammable Resistor	TF CAP.	Thin Film Capacitor
CH V R	Chip Variable Resistor	MPP CAP.	Metalized Polypropylene Capacitor
CH MG R	Chip Metal Glazed Resistor	TAN. CAP.	Tantalum Capacitor
COMP. R	Composition Resistor	CH C CAP.	Chip Ceramic Capacitor
LPTC R	Linear Positive Temperature Coefficient Resistor	BP E CAP.	Bi-Polar Electrolytic Capacitor
		CH AL E CAP.	Chip Aluminum Electrolytic Capacitor
		CH AL BP CAP.	Chip Aluminum Bi-Polar Capacitor
		CH TAN. E CAP.	Chip Tantalum Electrolytic Capacitor
		CH AL BP E CAP.	Chip Tantalum Bi-Polar Electrolytic Capacitor

RESISTORS									
F	G	J	K	M	N	R	H	Z	P
±1%	±2%	±5%	±10%	±20%	±30%	+30% -10%	+50% -10%	+80% -20%	+100% -0%

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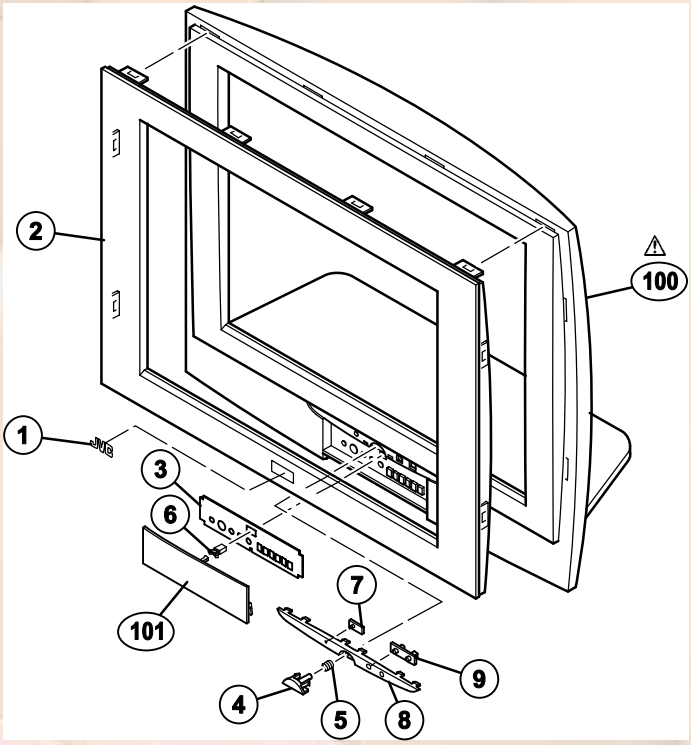
USING P.W. BOARD & REMOTE CONTROL UNIT

P.W.B ASS'Y	HV-29JH24	HV-29JH74/G
MAIN P.W.B	SML-1512A-H2	SML-1513A-H2
POWER & DEF P.W.B	SML-2505A-H2	←
CRT SOKET P.W.B	SML-3503A-H2	←
FRONT CONTROL P.W.B	SML-8502A-H2	←
AV JACK P.W.B	SML0J505A-H2	SML0J506A-H2
MICON/100HZ P.W.B	SML0Z504A-H2	SML0Z503A-H2
REMOTE CONTROL UNIT	RM-C1351-1H	RM-C1350-2H

EXPLODED VIEW PARTS LIST -1

⚠	Ref.No.	Part No.	Part Name	Description	Local
	1	GG30109-001A-H	JVC MARK ASSY		
	2	GG10280-004A-H	FRONT PANEL		HV-29JH24
	2	GG10280-003A-H	FRONT PANEL		HV-29JH74/G
	3	GG20059-001A-H	OPERATION SHEET		
	4	GG30098-002A-H	POWER KNOB		
	5	CM35235-009-H	SPRING		
	6	CM48229-00A-C	DOOR LATCH		
	7	GG30099-001A-H	REMOCON LENS		
	8	GG20064-001A-H	CONTROL PANEL		
	9	GG30100-001A-H	LED LENS		
⚠	100	GG10278-001B-H	FRONT CABINET ASSY	Inc.No.101	
	101	GG20058-001A-H	DOOR		

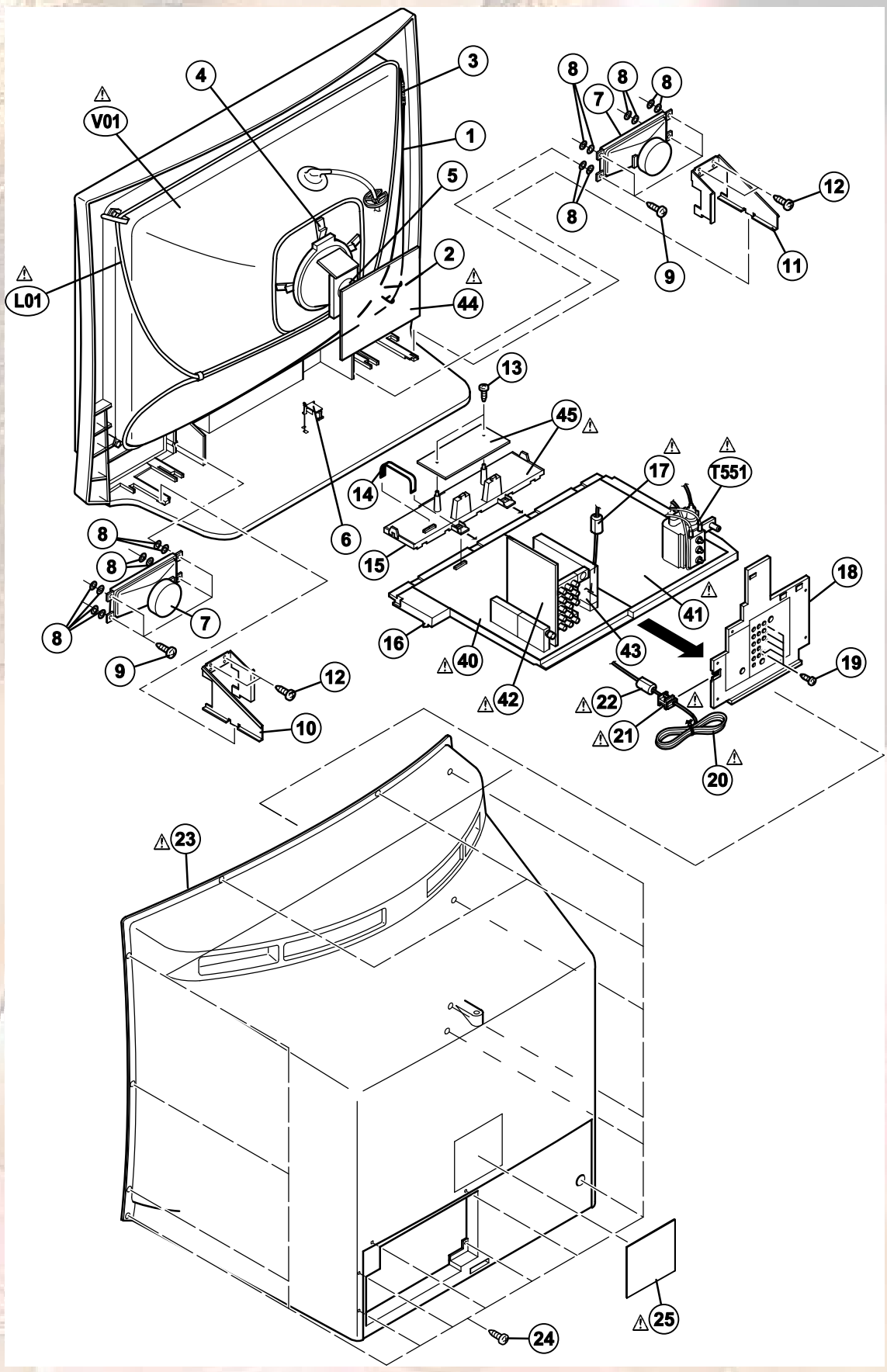
EXPLODED VIEW -1



EXPLODED VIEW PARTS LIST -2

⚠	Ref.No.	Part No.	Part Name	Description	Local
⚠	V01	A68QCU770XV1K	PICTURE TUBE(ITC)	Inc.DEF YOKE	
⚠	L01	QQW0150-001	DEG COIL		
⚠	T551	QQH0172-001	FB TRANSF		
	1	CHGB0020-0B-FH	BRAIDED ASSY		
	2	CHGB0017-0C	BRAIDED SUB ASSY		
	3	A48457-3-H	SPRING		
	4	CE40764-00A	WEDGE ASSY	(x4)	
	5	CE42730-00A	PC MAGNET		
	6	LC30103-001B-H	CHASSIS ADAPTER		
	7	QAS0139-001	SPEAKER	SP01/SP02(x2)	
	8	GG40010-003A-H	WASHER SHEET	(x16)	
	9	QYSBSF4012ZA	TAP SCREW	M4 x 12mm(x8)	
	10	GG20065-001A-H	SUPPORT BRACKET	RIGHT	
	11	GG20065-002A-H	SUPPORT BRACKET	LEFT	
	12	QYSBSF4012ZA	TAP SCREW	M4 x 12mm(x4)	
	13	QYSBSFG3012ZA	TAP SCREW	M3 x 12mm(x2)	
	14	CHFB119-08BD	FFC WIRE		
	15	GG10277-003A-H	CONTROL BASE		
	16	LC10764-002A-H	CHASSIS BASE		
⚠	17	QQR0491-001	FERRITE CORE		
	18	LC10766-004A-H	AV BOARD		
	19	QYSBSF3012ZA	TAP SCREW	M3 x 12mm(x5)	
⚠	20	QMPR340-165-K2	POWER CORD	1.65m BLACK	
⚠	21	CM23167-A01-H	POWER CORD CLAMP		
⚠	22	QQR0491-001	FERRITE CORE		
⚠	23	GG10276-001B-H	REAR COVER		
	24	QYSBSFG4016ZA	TAP SCREW	M4 x 16mm(x16)	
⚠	25	GG20024-001B-H	RATING LABEL		
⚠	40	SML-1512A-H2	MAIN PWB		HV-29JH24
⚠	40	SML-1513A-H2	MAIN PWB		HV-29JH74/G
⚠	41	SML-2505A-H2	POWER & DEF PWB		
⚠	42	SML0J505A-H2	AV JACK PWB		HV-29JH24
⚠	42	SML0J506A-H2	AV JACK PWB		HV-29JH74/G
⚠	43	SML0Z504A-H2	MICON/100HZ PWB		HV-29JH24
⚠	43	SML0Z503A-H2	MICON/100HZ PWB		HV-29JH74/G
⚠	44	SML-3503A-H2	CRT SOCKET PWB		
⚠	45	SML-8502A-H2	FRONT CONTROL PWB		

EXPLODED VIEW -2



PRINTED WIRING BOARD PARTS LIST [HV-29JH24]

MAIN P.W. BOARD ASS'Y (SML-1512A-H2)

⚠Ref No.	Part No.	Part Name	Description Local
IC101	MSP3413G-QA-B3	IC	
IC201	CXA2089Q-X	IC	
IC501	BA10324AF-XE	IC	
IC551	LA6515	IC	
IC601	BA4558F-X	IC	
IC651	AN5277	IC	
IC701	ATE32-29JH24	IC	(SERVICE)
IC901	AN78L08-T	IC	
IC902	MM1565AF-X	IC	
Q001	2SC3928A/QR/-X	TRANSISTOR	
Q002	2SC3928A/QR/-X	TRANSISTOR	
Q101	UN2213-X	DIGI TRANSISTOR	
Q210	2SA1530A/QR/-X	TRANSISTOR	
Q211	DTC323TK-X	DIGI TRANSISTOR	
Q214	DTC323TK-X	DIGI TRANSISTOR	
Q216	2SC3928A/QR/-X	TRANSISTOR	
Q217	2SC1740S/QR/-T	TRANSISTOR	
Q305	KTC3199/YG/-T	TRANSISTOR	
Q501	2SC3928A/QR/-X	TRANSISTOR	
Q502	2SC3928A/QR/-X	TRANSISTOR	
Q621	2SA1530A/QR/-X	TRANSISTOR	
Q623	DTC323TK-X	DIGI TRANSISTOR	
Q624	DTC323TK-X	DIGI TRANSISTOR	
Q628	UN2213-X	DIGI TRANSISTOR	
Q629	2SC3928A/QR/-X	TRANSISTOR	
Q632	2SA1530A/QR/-X	TRANSISTOR	
Q701	2SA1530A/QR/-X	TRANSISTOR	
Q702	2SC3928A/QR/-X	TRANSISTOR	
D201	MA3120/M/-X	Z DIODE	
D202	MA3120/M/-X	Z DIODE	
D203	MA3120/M/-X	Z DIODE	
D204	MA3120/M/-X	Z DIODE	
D205	MA3120/M/-X	Z DIODE	
D206	MA3120/M/-X	Z DIODE	
D207	MA3120/M/-X	Z DIODE	
D208	MA3120/M/-X	Z DIODE	
D215	MA3120/M/-X	Z DIODE	
D216	MA3120/M/-X	Z DIODE	
D217	MA3120/M/-X	Z DIODE	
D218	MA3120/M/-X	Z DIODE	
D219	MA3120/M/-X	Z DIODE	
D220	MA3120/M/-X	Z DIODE	
D501	MA111-X	SI DIODE	
D502	MA111-X	SI DIODE	
D503	MA111-X	SI DIODE	
D504	MA111-X	SI DIODE	
D623	MA111-X	SI DIODE	
D626	MA111-X	SI DIODE	
D629	MA111-X	SI DIODE	
D630	MA111-X	SI DIODE	
D631	MA111-X	SI DIODE	
D633	MA111-X	SI DIODE	
D651	MA3330/L/-X	Z DIODE	
D653	MA3330/L/-X	Z DIODE	
D701	MA3056/M/-X	Z DIODE	
D702	MA3056/M/-X	Z DIODE	
D703	MA3056/M/-X	Z DIODE	
D704	MA3056/M/-X	Z DIODE	
D705	MA111-X	SI DIODE	
D981	MA111-X	SI DIODE	
D982	MA111-X	SI DIODE	
C001	NCB31HK-222X	C CAPACITOR	2200pF 50V K
C002	QETN1HM-106Z	E CAPACITOR	10uF 50V M
C004	NCB31CK-104X	C CAPACITOR	0.1uF 16V K
C005	QETN1CM-108Z	E CAPACITOR	1000uF 16V M
C006	NCB31HK-103X	C CAPACITOR	0.01uF 50V K
C007	QETN1HM-106Z	E CAPACITOR	10uF 50V M
C010	NCF31AZ-105X	C CAPACITOR	1uF 10V Z
C011	QETN1HM-106Z	E CAPACITOR	10uF 50V M
C012	NCB31HK-103X	C CAPACITOR	0.01uF 50V K
C013	NCB31HK-472X	C CAPACITOR	4700pF 50V K
C014	NCB31CK-104X	C CAPACITOR	0.1uF 16V K
C015	QETN1HM-106Z	E CAPACITOR	10uF 50V M
C016	NCB31HK-472X	C CAPACITOR	4700pF 50V K
C017	NCB31CK-104X	C CAPACITOR	0.1uF 16V K
C101	NCB31CK-104X	C CAPACITOR	0.1uF 16V K
C102	QETN1HM-106Z	E CAPACITOR	10uF 50V M
C103	NCB31CK-104X	C CAPACITOR	0.1uF 16V K
C104	QETN1CM-107Z	E CAPACITOR	100uF 16V M

⚠Ref No.	Part No.	Part Name	Description Local
C105	QETN1HM-106Z	E CAPACITOR	10uF 50V M
C106	NCB31CK-104X	C CAPACITOR	0.1uF 16V K
C117	NCB31HK-103X	C CAPACITOR	0.01uF 50V K
C118	NCB31HK-103X	C CAPACITOR	0.01uF 50V K
C119	NDC31HJ-2R0X	C CAPACITOR	2pF 50V J
C120	NDC31HJ-2R0X	C CAPACITOR	2pF 50V J
C121	NCB31HK-103X	C CAPACITOR	0.01uF 50V K
C122	NDC31HJ-102X	C CAPACITOR	1000pF 50V J
C123	NDC31HJ-102X	C CAPACITOR	1000pF 50V J
C124	QETN1HM-106Z	E CAPACITOR	10uF 50V M
C125	QETN1HM-106Z	E CAPACITOR	10uF 50V M
C126	NCB31CK-104X	C CAPACITOR	0.1uF 16V K
C127	QETN1HM-106Z	E CAPACITOR	10uF 50V M
C128	NCB31CK-104X	C CAPACITOR	0.1uF 16V K
C130	NDC31HJ-102X	C CAPACITOR	1000pF 50V J
C131	NDC31HJ-102X	C CAPACITOR	1000pF 50V J
C201	QETN1HM-106Z	E CAPACITOR	10uF 50V M
C202	QETN1HM-106Z	E CAPACITOR	10uF 50V M
C204	NCF31AZ-105X	C CAPACITOR	1uF 10V Z
C205	NCF31AZ-105X	C CAPACITOR	1uF 10V Z
C206	QETN1HM-106Z	E CAPACITOR	10uF 50V M
C207	NCF31AZ-105X	C CAPACITOR	1uF 10V Z
C209	NCF31AZ-105X	C CAPACITOR	1uF 10V Z
C210	NCB31HK-103X	C CAPACITOR	0.01uF 50V K
C213	NCF31AZ-105X	C CAPACITOR	1uF 10V Z
C215	QETN1HM-106Z	E CAPACITOR	10uF 50V M
C216	NCF31AZ-105X	C CAPACITOR	1uF 10V Z
C219	NCF31AZ-105X	C CAPACITOR	1uF 10V Z
C220	NCF31AZ-105X	C CAPACITOR	1uF 10V Z
C222	QETN1HM-106Z	E CAPACITOR	10uF 50V M
C223	NCF31AZ-105X	C CAPACITOR	1uF 10V Z
C224	NCF31AZ-105X	C CAPACITOR	1uF 10V Z
C225	NCB31HK-103X	C CAPACITOR	0.01uF 50V K
C226	QETN1HM-106Z	E CAPACITOR	10uF 50V M
C227	QETN1HM-106Z	E CAPACITOR	10uF 50V M
C228	NCB31HK-103X	C CAPACITOR	0.01uF 50V K
C229	QETN1HM-106Z	E CAPACITOR	10uF 50V M
C230	QENC1EM-106Z	BP E CAPACITOR	10uF 25V M
C231	QENC1EM-106Z	BP E CAPACITOR	10uF 25V M
C234	NCB31HK-103X	C CAPACITOR	0.01uF 50V K
C235	QETN1CM-107Z	E CAPACITOR	100uF 16V M
C236	QETN1CM-477Z	E CAPACITOR	470uF 16V M
C237	NCF31AZ-105X	C CAPACITOR	1uF 10V Z
C238	NCF31AZ-105X	C CAPACITOR	1uF 10V Z
C245	QETN1HM-106Z	E CAPACITOR	10uF 50V M
C246	NCB31HK-103X	C CAPACITOR	0.01uF 50V K
C247	NCB31HK-103X	C CAPACITOR	0.01uF 50V K
C303	QETN1CM-227Z	E CAPACITOR	220uF 16V M
C304	NCB31HK-103X	C CAPACITOR	0.01uF 50V K
C308	NCB31CK-224X	C CAPACITOR	0.22uF 16V K
C309	NCB31HK-102X	C CAPACITOR	1000pF 50V K
C310	NCB31CK-224X	C CAPACITOR	0.22uF 16V K
C503	NDC31HJ-102X	C CAPACITOR	1000pF 50V J
C504	NCB31CK-104X	C CAPACITOR	0.1uF 16V K
C505	NCB31CK-104X	C CAPACITOR	0.1uF 16V K
C506	NCB31CK-104X	C CAPACITOR	0.1uF 16V K
C507	NCB31CK-104X	C CAPACITOR	0.1uF 16V K
C508	QETN1CM-107Z	E CAPACITOR	100uF 16V M
C509	NCB31CK-104X	C CAPACITOR	0.1uF 16V K
C510	NCB31EK-333X	C CAPACITOR	0.033uF 25V K
C515	NCB31HK-103X	C CAPACITOR	0.01uF 50V K
C551	NCF31CZ-224X	C CAPACITOR	0.22uF 16V Z
C552	NCF31CZ-224X	C CAPACITOR	0.22uF 16V Z
C553	QETN1EM-476Z	E CAPACITOR	47uF 25V M
C554	NCF31CZ-224X	C CAPACITOR	0.22uF 16V Z
C555	NCF31CZ-224X	C CAPACITOR	0.22uF 16V Z
C561	NDC31HJ-390X	C CAPACITOR	39pF 50V J
C601	QENC1HM-105Z	BP E CAPACITOR	1uF 50V M
C602	QENC1HM-105Z	BP E CAPACITOR	1uF 50V M
C603	QETN1CM-107Z	E CAPACITOR	100uF 16V M
C604	NCB31HK-153X	C CAPACITOR	0.015uF 50V K
C605	NCB31HK-122X	C CAPACITOR	1200pF 50V K
C606	NCB31HK-153X	C CAPACITOR	0.015uF 50V K
C607	NCB31HK-122X	C CAPACITOR	1200pF 50V K
C608	NCB31HK-223X	C CAPACITOR	0.022uF 50V K
C609	NCB31HK-223X	C CAPACITOR	0.022uF 50V K
C610	QENC1CM-106Z	BP E CAPACITOR	10uF 16V M
C611	QENC1CM-106Z	BP E CAPACITOR	10uF 16V M
C623	QETN1EM-108Z	E CAPACITOR	1000uF 25V M
C624	QETN1HM-336Z	E CAPACITOR	33uF 50V M
C650	QETN1CM-107Z	E CAPACITOR	100uF 16V M
C651	QETN1HM-106Z	E CAPACITOR	10uF 50V M
C652	QETN1HM-106Z	E CAPACITOR	10uF 50V M
C654	QETN1HM-107Z	E CAPACITOR	100uF 50V M

⚠Ref No.	Part No.	Part Name	Description Local
C655	NCF21HZ-224X	C CAPACITOR	0.22uF 50V Z
C656	NCF21HZ-224X	C CAPACITOR	0.22uF 50V Z
C657	QETM1VM-228	E CAPACITOR	2200uF 35V M
C660	NCF21HZ-224X	C CAPACITOR	0.22uF 50V Z
C661	NCF21HZ-224X	C CAPACITOR	0.22uF 50V Z
C666	QETN1HM-106Z	E CAPACITOR	10uF 50V M
C691	NCB31HK-102X	C CAPACITOR	1000pF 50V K
C701	NCB31HK-104X	C CAPACITOR	0.1uF 50V K
C702	NCB31CK-104X	C CAPACITOR	0.1uF 16V K
C711	NCB31CK-104X	C CAPACITOR	0.1uF 16V K
C901	QETN1CM-107Z	E CAPACITOR	100uF 16V M
C902	NCB31CK-104X	C CAPACITOR	0.1uF 16V K
C903	QETN1CM-107Z	E CAPACITOR	100uF 16V M
C904	NCF31AZ-105X	C CAPACITOR	1uF 10V Z
C905	QETN1HM-106Z	E CAPACITOR	10uF 50V M
C906	NCB20JK-225X	C CAPACITOR	2.2uF 6.3V K
C907	NDC31HJ-471X	C CAPACITOR	470pF 50V J
C908	QETN1CM-227Z	E CAPACITOR	220uF 16V M
R002	NRSA63J-101X	MG RESISTOR	100Ω 1/16W J
R003	NRSA63J-101X	MG RESISTOR	100Ω 1/16W J
R004	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J
R005	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J
R006	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J
R007	NRSA63J-222X	MG RESISTOR	2.2kΩ 1/16W J
R008	NRSA63J-102X	MG RESISTOR	1kΩ 1/16W J
R009	NRSA63J-331X	MG RESISTOR	330Ω 1/16W J
R010	NRSA63J-270X	MG RESISTOR	27Ω 1/16W J
R011	NRSA63J-102X	MG RESISTOR	1kΩ 1/16W J
R012	NRSA63J-271X	MG RESISTOR	270Ω 1/16W J
R101	NRSA63J-101X	MG RESISTOR	100Ω 1/16W J
R102	NRSA63J-101X	MG RESISTOR	100Ω 1/16W J
R105	NRSA63J-103X	MG RESISTOR	10kΩ 1/16W J
R106	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J
R107	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J
R108	NRSA63J-101X	MG RESISTOR	100Ω 1/16W J
R109	NRSA63J-101X	MG RESISTOR	100Ω 1/16W J
R205	NRSA63J-750X	MG RESISTOR	75Ω 1/16W J
R206	NRSA63J-750X	MG RESISTOR	75Ω 1/16W J
R207	NRSA63J-750X	MG RESISTOR	75Ω 1/16W J
R208	NRSA63J-222X	MG RESISTOR	2.2kΩ 1/16W J
R209	NRSA63J-222X	MG RESISTOR	2.2kΩ 1/16W J
R210	NRSA63J-333X	MG RESISTOR	33kΩ 1/16W J
R211	NRSA63J-333X	MG RESISTOR	33kΩ 1/16W J
R212	NRSA63J-101X	MG RESISTOR	100Ω 1/16W J
R213	NRSA63J-101X	MG RESISTOR	100Ω 1/16W J
R215	NRSA63J-222X	MG RESISTOR	2.2kΩ 1/16W J
R216	NRSA63J-333X	MG RESISTOR	33kΩ 1/16W J
R217	NRSA63J-222X	MG RESISTOR	2.2kΩ 1/16W J
R218	NRSA63J-333X	MG RESISTOR	33kΩ 1/16W J
R234	NRSA63J-222X	MG RESISTOR	2.2kΩ 1/16W J
R235	NRSA63J-333X	MG RESISTOR	33kΩ 1/16W J
R236	NRSA63J-222X	MG RESISTOR	2.2kΩ 1/16W J
R237	NRSA63J-333X	MG RESISTOR	33kΩ 1/16W J
R238	NRSA63J-101X	MG RESISTOR	100Ω 1/16W J
R239	NRSA63J-101X	MG RESISTOR	100Ω 1/16W J
R240	NRSA63J-101X	MG RESISTOR	100Ω 1/16W J
R243	NRSA63J-101X	MG RESISTOR	100Ω 1/16W J
R244	NRSA63J-101X	MG RESISTOR	100Ω 1/16W J
R245	NRSA63J-101X	MG RESISTOR	100Ω 1/16W J
R246	NRSA63J-101X	MG RESISTOR	100Ω 1/16W J
R247	NRSA63J-101X	MG RESISTOR	100Ω 1/16W J
R258	NRSA63J-823X	MG RESISTOR	82kΩ 1/16W J
R259	NRSA63J-823X	MG RESISTOR	82kΩ 1/16W J
R260	NRSA63J-104X	MG RESISTOR	100kΩ 1/16W J
R264	NRSA63J-101X	MG RESISTOR	100Ω 1/16W J
R265	NRSA63J-101X	MG RESISTOR	100Ω 1/16W J
R266	NRSA63J-101X	MG RESISTOR	100Ω 1/16W J
R267	NRSA63J-101X	MG RESISTOR	100Ω 1/16W J
R268	NRSA63J-101X	MG RESISTOR	100Ω 1/16W J
R269	NRSA63J-101X	MG RESISTOR	100Ω 1/16W J
R270	NRSA63J-101X	MG RESISTOR	100Ω 1/16W J
R271	NRSA63J-333X	MG RESISTOR	33kΩ 1/16W J
R272	NRSA63J-333X	MG RESISTOR	33kΩ 1/16W J
R273	NRSA63J-222X	MG RESISTOR	2.2kΩ 1/16W J
R274	NRSA63J-222X	MG RESISTOR	2.2kΩ 1/16W J
R275	NRSA63J-391X	MG RESISTOR	390Ω 1/16W J
R276	NRSA63J-391X	MG RESISTOR	390Ω 1/16W J
R277	NRSA63J-101X	MG RESISTOR	100Ω 1/16W J
R278	NRSA63J-222X	MG RESISTOR	2.2kΩ 1/16W J
R279	NRSA63J-562X	MG RESISTOR	5.6kΩ 1/16W J
R280	NRSA63J-562X	MG RESISTOR	5.6kΩ 1/16W J
R281	NRSA63J-102X	MG RESISTOR	1kΩ 1/16W J
R282	NRSA63J-102X	MG RESISTOR	1kΩ 1/16W J
R286	NRSA63J-101X	MG RESISTOR	100Ω 1/16W J
R287	QRK126J-151X	UNF C RESISTOR	150Ω 1/2W J
R288	NRSA63J-750X	MG RESISTOR	75Ω 1/16W J

⚠Ref No.	Part No.	Part Name	Description Local
R289	NRSA63J-101X	MG RESISTOR	100Ω 1/16W J
R290	NRSA63J-101X	MG RESISTOR	100Ω 1/16W J
R295	NRSA63J-333X	MG RESISTOR	33kΩ 1/16W J
R296	NRSA63J-101X	MG RESISTOR	100Ω 1/16W J
R311	QRK126J-391X	UNF C RESISTOR	390Ω 1/2W J
R312	NRSA63J-680X	MG RESISTOR	68Ω 1/16W J
R313	QRK126J-391X	UNF C RESISTOR	390Ω 1/2W J
R314	NRSA63J-223X	MG RESISTOR	22kΩ 1/16W J
R315	NRSA63J-680X	MG RESISTOR	68Ω 1/16W J
R501	NRSA63J-123X	MG RESISTOR	12kΩ 1/16W J
R502	NRSA63J-123X	MG RESISTOR	12kΩ 1/16W J
R503	NRSA63J-123X	MG RESISTOR	12kΩ 1/16W J
R504	NRSA63J-123X	MG RESISTOR	12kΩ 1/16W J
R505	NRSA63J-124X	MG RESISTOR	120kΩ 1/16W J
R506	NRSA63J-472X	MG RESISTOR	4.7kΩ 1/16W J
R507	NRSA63J-273X	MG RESISTOR	27kΩ 1/16W J
R509	NRSA63J-123X	MG RESISTOR	12kΩ 1/16W J
R510	NRSA63J-563X	MG RESISTOR	56kΩ 1/16W J
R511	NRSA63J-682X	MG RESISTOR	6.8kΩ 1/16W J
R512	NRSA63J-153X	MG RESISTOR	15kΩ 1/16W J
R513	NRSA63J-332X	MG RESISTOR	3.3kΩ 1/16W J
R514	NRSA63J-392X	MG RESISTOR	3.9kΩ 1/16W J
R515	NRSA63J-333X	MG RESISTOR	33kΩ 1/16W J
R516	NRSA63J-123X	MG RESISTOR	12kΩ 1/16W J
R517	NRSA63J-123X	MG RESISTOR	12kΩ 1/16W J
R518	NRSA63J-123X	MG RESISTOR	12kΩ 1/16W J
R519	NRSA63J-472X	MG RESISTOR	4.7kΩ 1/16W J
R520	NRSA63J-333X	MG RESISTOR	33kΩ 1/16W J
R521	NRSA63J-473X	MG RESISTOR	47kΩ 1/16W J
R523	NRSA63J-224X	MG RESISTOR	220kΩ 1/16W J
R524	NRSA63J-224X	MG RESISTOR	220kΩ 1/16W J
R525	NRSA63J-223X	MG RESISTOR	22kΩ 1/16W J
R526	NRSA63J-683X	MG RESISTOR	68kΩ 1/16W J
R527	NRSA63J-563X	MG RESISTOR	56kΩ 1/16W J
R528	NRSA63J-472X	MG RESISTOR	4.7kΩ 1/16W J
R529	NRSA63J-473X	MG RESISTOR	47kΩ 1/16W J
R530	NRSA63J-154X	MG RESISTOR	150kΩ 1/16W J
R531	NRSA63J-472X	MG RESISTOR	4.7kΩ 1/16W J
R532	NRSA63J-123X	MG RESISTOR	12kΩ 1/16W J
R533	NRSA63J-272X	MG RESISTOR	2.7kΩ 1/16W J
R536	NRSA63J-154X	MG RESISTOR	150kΩ 1/16W J
R537	NRSA63J-123X	MG RESISTOR	12kΩ 1/16W J
R551	NRSA63J-124X	MG RESISTOR	120kΩ 1/16W J
R552	NRSA63J-100X	MG RESISTOR	10Ω 1/16W J
R553	NRSA63J-683X	MG RESISTOR	68kΩ 1/16W J
R554	NRSA63J-562X	MG RESISTOR	5.6kΩ 1/16W J
R555	NRSA63J-154X	MG RESISTOR	150kΩ 1/16W J
R556	NRSA63J-104X	MG RESISTOR	100kΩ 1/16W J
R557	NRSA63J-100X	MG RESISTOR	10Ω 1/16W J
R558	NRSA63J-562X	MG RESISTOR	5.6kΩ 1/16W J
R559	NRSA63J-333X	MG RESISTOR	33kΩ 1/16W J
R560	NRSA63J-472X	MG RESISTOR	4.7kΩ 1/16W J
R601	NRSA63J-333X	MG RESISTOR	33kΩ 1/16W J
R602	NRSA63J-333X	MG RESISTOR	33kΩ 1/16W J
R603	NRSA63J-103X	MG RESISTOR	10kΩ 1/16W J
R604	NRSA63J-332X	MG RESISTOR	3.3kΩ 1/16W J
R605	NRSA63J-102X	MG RESISTOR	1kΩ 1/16W J
R606	NRSA63J-102X	MG RESISTOR	1kΩ 1/16W J
R607	NRSA63J-332X	MG RESISTOR	3.3kΩ 1/16W J
R608	NRSA63J-332X	MG RESISTOR	3.3kΩ 1/16W J
R609	NRSA63J-332X	MG RESISTOR	3.3kΩ 1/16W J
R610	NRSA63J-222X	MG RESISTOR	2.2kΩ 1/16W J
R611	NRSA63J-222X	MG RESISTOR	2.2kΩ 1/16W J
R612	NRSA63J-221X	MG RESISTOR	220Ω 1/16W J
R613	NRSA63J-221X	MG RESISTOR	220Ω 1/16W J
R621	NRSA63J-104X	MG RESISTOR	100kΩ 1/16W J
R623	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J
R624	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J
R629	NRSA63J-103X	MG RESISTOR	10kΩ 1/16W J
R631	NRSA63J-473X	MG RESISTOR	47kΩ 1/16W J
R632	NRSA63J-822X	MG RESISTOR	8.2kΩ 1/16W J
R635	NRSA63J-822X	MG RESISTOR	8.2kΩ 1/16W J
R637	NRSA63J-473X	MG RESISTOR	47kΩ 1/16W J
R638	NRSA63J-273X	MG RESISTOR	27kΩ 1/16W J
R650	NRSA63J-103X	MG RESISTOR	10kΩ 1/16W J
R651	NRSA63J-472X	MG RESISTOR	4.7kΩ 1/16W J
R652	NRSA63J-472X	MG RESISTOR	4.7kΩ 1/16W J
R653	NRSA63J-104X	MG RESISTOR	100kΩ 1/16W J
R654	NRSA63J-104X	MG RESISTOR	100kΩ 1/16W J
R655	NRSA63J-103X	MG RESISTOR	10kΩ 1/16W J
R657	NRSA63J-103X	MG RESISTOR	10kΩ 1/16W J
R658	QRE121J-8R2Y	C RESISTOR	8.2Ω 1/2W J
R660	QRE121J-8R2Y	C RESISTOR	8.2Ω 1/2W J
R661	NRSA63J-183X	MG RESISTOR	18kΩ 1/16W J
R673	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J
R702	NRSA63J-221X	MG RESISTOR	220Ω 1/16W J
R703	NRSA63J-221X	MG RESISTOR	220Ω 1/16W J

⚠Ref No.	Part No.	Part Name	Description Local
R704	NRSA63J-221X	MG RESISTOR	220Ω 1/16W J
R705	NRSA63J-221X	MG RESISTOR	220Ω 1/16W J
R706	NRSA63J-101X	MG RESISTOR	100Ω 1/16W J
R707	NRSA63J-101X	MG RESISTOR	100Ω 1/16W J
R708	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J
R709	NRSA63J-222X	MG RESISTOR	2.2kΩ 1/16W J
R710	NRSA63J-104X	MG RESISTOR	100kΩ 1/16W J
R713	QRT039J-3R3	MF RESISTOR	3.3Ω 3W J
L001	QQL244K-270Z	PEAKING COIL	27uH K
L002	QQL244K-100Z	PEAKING COIL	10uH K
L003	QQL244K-100Z	PEAKING COIL	10uH K
L101	QRN143J-0R0X	C RESISTOR	0Ω 1/4W J
L102	QQL244K-4R7Z	PEAKING COIL	4.7uH K
CN001	QGB1505J1-35	CONNECTOR	B-B (1-35)
CN003	QGB1506L1-16	CONNECTOR	B-B (1-16)
CN004	QGB1506L1-16	CONNECTOR	B-B (1-16)
CN005	QGB1506L1-16	CONNECTOR	B-B (1-16)
CN00A	QJB003-031813	SIN ID C-B WIRE	
CN00B	QGF1220C2-19	CONNECTOR	FFC/FPC (1-19)
HS651	LC32265-001A	HEAT SINK/AL-F/	
K001	NQR0389-003X	FERRITE BEADS	
K002	NQR0389-003X	FERRITE BEADS	
K101	NQR0389-003X	FERRITE BEADS	
K102	NQR0389-003X	FERRITE BEADS	
K551	QQR0621-002Z	FERRITE BEADS	
K552	QQR0621-002Z	FERRITE BEADS	
LC001	QQR1199-001	EMI FILTER	
LC002	QQR1199-001	EMI FILTER	
LC003	QQR1199-001	EMI FILTER	
LC005	QQR1199-001	EMI FILTER	
LC101	NQR0431-001X	EMI FILTER	0.22uF 50V Z
⚠TU001	QAU0197-002	TUNER	
X101	CE42546-001Z	CRYSTAL	

POWER & DEF P.W. BOARD ASS'Y (SML-2505A-H2)

⚠Ref No.	Part No.	Part Name	Description Local
IC401	LA7876NZ	IC	
IC461	BA10393	IC	
IC901	STR-F6256S-F7	IC	
IC931	STR-A6359	IC	
IC951	SE140N	IC	
IC961	L7812CP	IC	
IC962	L7809CP	IC	
Q461	RDN050N20	POWER MOS FET	
Q462	KTC3199/YG/-T	TRANSISTOR	
Q463	KTC3199/YG/-T	TRANSISTOR	
Q464	KTA1267/YG/-T	TRANSISTOR	
Q481	DTC124ESA-T	DIGI TRANSISTOR	
Q482	KTC3199/YG/-T	TRANSISTOR	
Q501	BSN304-T	TRANSISTOR	
⚠Q521	2SC5857-LB	POW TRANSISTOR	H.OUT
Q581	2SA1208/ST/Z1-T	TRANSISTOR	
Q582	DTC144ESA-T	DIGI TRANSISTOR	
Q941	KTC3199/YG/-T	TRANSISTOR	
Q942	KTC3199/YG/-T	TRANSISTOR	
Q943	KTC3199/YG/-T	TRANSISTOR	
D402	1SR35-400A-T2	SI DIODE	
D403	1SR35-400A-T2	SI DIODE	
D461	RGP10J-5025-T3	SI DIODE	
D462	1SS133-T2	SI DIODE	
D463	1SS133-T2	SI DIODE	
D481	1SS133-T2	SI DIODE	
D501	1SS81-T5	SI DIODE	
D521	V11CA-C1	SI DIODE	
D522	FMV-3FU-F1	SI DIODE	
D523	MTZJ22B-T2	Z DIODE	
D541	RGP10J-5025-T3	SI DIODE	
D542	MTZJ3.9B-T2	Z DIODE	
D551	RGP10J-5025-T3	SI DIODE	
D552	RGP10J-5025-T3	SI DIODE	
D553	RH1S-T3	SI DIODE	
D582	MTZJ7.5B-T2	Z DIODE	
D901	D3SB60	BRIDGE DIODE	
D902	RG1C-LFA1	SI DIODE	
D903	MTZJ15A-T2	Z DIODE	
D904	EU2-T2	FR DIODE	
D905	1SS133-T2	SI DIODE	
D906	MTZJ27B-T2	Z DIODE	

⚠Ref No.	Part No.	Part Name	Description Local
D907	1SS133-T2	SI DIODE	
D908	1SS133-T2	SI DIODE	
D910	MTZJ15B-T2	Z DIODE	
D911	MTZJ15B-T2	Z DIODE	
D931	S1WB/A/60-4101	BRIDGE DIODE	
D933	AU01Z-T2	FR DIODE	
D934	MTZJ27B-T2	Z DIODE	
D935	MTZJ27B-T2	Z DIODE	
D941	RGP10J-5025-T3	SI DIODE	
D942	MTZJ7.5B-T2	Z DIODE	
D943	MTZJ3.9B-T2	Z DIODE	
D945	1SS133-T2	SI DIODE	
D946	1SS133-T2	SI DIODE	
D947	1SS133-T2	SI DIODE	
D948	1SR35-400A-T2	SI DIODE	
D951	RU4AM-LFT2	SI DIODE	
D952	RU4AM-LFT2	SI DIODE	
D953	RGP10J-5025-T3	SI DIODE	
D954	RU3YX-LFC4	SI DIODE	
D956	FMX-G12S	SI DIODE	
D958	MTZJ33B-T2	Z DIODE	
D959	1SS133-T2	SI DIODE	
D981	1SS133-T2	SI DIODE	
D982	1SS133-T2	SI DIODE	
D983	1SS133-T2	SI DIODE	
C403	QFLC2AJ-104Z	M CAPACITOR	0.1uF 100V J
C404	QCZ0120-104Z	C CAPACITOR	0.1uF 25V Z
C405	QDC31HJ-820Z	C CAPACITOR	82pF 50V J
C406	QETM1VM-108	E CAPACITOR	1000uF 35V M
C408	QETN1VM-337Z	E CAPACITOR	330uF 35V M
C409	QFVF1HJ-474Z	MF CAPACITOR	0.47uF 50V J
C410	QFVF1HJ-474Z	MF CAPACITOR	0.47uF 50V J
C411	QFLC2AJ-104Z	M CAPACITOR	0.1uF 100V J
C414	QCB31HK-682Z	C CAPACITOR	6800pF 50V K
C415	QETN1VM-107Z	E CAPACITOR	100uF 35V M
C461	QEZ0414-226	BP E CAPACITOR	22uF 50V M
C462	QFN32DJ-152Z	M CAPACITOR	1500pF 200V J
C463	QFM72DJ-122Z	M CAPACITOR	1200pF 200V J
C464	QCZ0120-104Z	C CAPACITOR	0.1uF 25V Z
C465	QETN1HM-106Z	E CAPACITOR	10uF 50V M
C466	QFP31HJ-272Z	PP CAPACITOR	2700pF 50V J
C467	QFLC1HJ-102Z	M CAPACITOR	1000pF 50V J
C468	QETN1EM-476Z	E CAPACITOR	47uF 25V M
C470	QCS31HJ-470Z	C CAPACITOR	47pF 50V J
C471	QFLC1HJ-103Z	M CAPACITOR	0.01uF 50V J
C481	QETN2CM-475Z	E CAPACITOR	4.7uF 160V M
C501	QCB32HK-331Z	C CAPACITOR	330pF 500V K
C502	QFN32DK-103	M CAPACITOR	0.01uF 200V K
C503	QFVF1HJ-224Z	MF CAPACITOR	0.22uF 50V J
C521	QFZ0122-152	MPP CAPACITOR	1500pF 1.8kV H
C522	QFZ0196-113	MPP CAPACITOR	0.011uF 1.5kV H
C523	QFM72DJ-393	M CAPACITOR	0.039uF 200V J
C524	QFP32GJ-273	PP CAPACITOR	0.027uF 400V J
C526	QFZ0197-104	MPP CAPACITOR	0.1uF 250V J
C527	QFZ0197-154	MPP CAPACITOR	0.15uF 250V J
C528	QFZ0197-104	MPP CAPACITOR	0.1uF 250V J
C529	QFZ0197-154	MPP CAPACITOR	0.15uF 250V J
C530	QCB32HK-561Z	C CAPACITOR	560pF 500V K
C531	QFZ0194-534	MPP CAPACITOR	0.53uF 250V J
C532	QETM2CM-227	E CAPACITOR	220uF 160V M
C541	QFVF1HJ-105Z	MF CAPACITOR	1uF 50V J
C551	QCB32HK-152Z	C CAPACITOR	1500pF 500V K
C552	QETN1CM-108Z	E CAPACITOR	1000uF 16V M
C553	QCB32HK-152Z	C CAPACITOR	1500pF 500V K
C554	QETN1CM-108Z	E CAPACITOR	1000uF 16V M
C555	QCB32HK-102Z	C CAPACITOR	1000pF 500V K
C556	QETN2EM-106Z	E CAPACITOR	10uF 250V M
C558	QETN1CM-477Z	E CAPACITOR	470uF 16V M
C581	QETN1CM-107Z	E CAPACITOR	100uF 16V M
C582	QETN1EM-476Z	E CAPACITOR	47uF 25V M
⚠C902	QFZ9072-224	MM CAPACITOR	0.22uF AC250V K
⚠C903	QFZ9072-224	MM CAPACITOR	0.22uF AC250V K
⚠C904	QCZ9054-472	C CAPACITOR	4700pF AC250V Z
⚠C905	QCZ9054-472	C CAPACITOR	4700pF AC250V Z
⚠C906	QCZ9054-472	C CAPACITOR	4700pF AC250V Z
C907	QEZ0371-397	E CAPACITOR	390uF 400V M
C908	QCB32HK-103	C CAPACITOR	0.01uF 500V K
C909	QCZ0340-391	C CAPACITOR	390pF 2kV K
C910	QETN1HM-476Z	E CAPACITOR	47uF 50V M
C911	QCB31HK-182Z	C CAPACITOR	1800pF 50V K
C912	QCZ0340-561	C CAPACITOR	560pF 2kV K
C914	QCB31HK-221Z	C CAPACITOR	220pF 50V K
C915	QFLC1HJ-104Z	M CAPACITOR	0.1uF 50V J
C916	QCB32HK-152Z	C CAPACITOR	1500pF 500V K
C917	QETN1HM-475Z	E CAPACITOR	4.7uF 50V M
⚠C931	QCZ9054-472	C CAPACITOR	4700pF AC250V Z

⚠Ref No.	Part No.	Part Name	Description	Local
⚠C932	QCZ9054-472	C CAPACITOR	4700pF AC250V Z	
⚠C933	QCZ9054-472	C CAPACITOR	4700pF AC250V Z	
C934	QEZ0632-226	E CAPACITOR	22uF 400V M	
C936	QCZ0340-151	C CAPACITOR	150pF 2kV K	
C937	QETN1HM-475Z	E CAPACITOR	4.7uF 50V M	
C938	QFLC1HJ-103Z	M CAPACITOR	0.01uF 50V J	
C939	QCB31HK-471Z	C CAPACITOR	470pF 50V K	
C941	QETN1AM-108Z	E CAPACITOR	1000uF 10V M	
C943	QETN1CM-107Z	E CAPACITOR	100uF 16V M	
C951	QEZ0203-227	E CAPACITOR	220uF 160V M	
C952	QETN1CM-108Z	E CAPACITOR	1000uF 16V M	
C953	QEHR1CM-227Z	E CAPACITOR	220uF 16V M	
C954	QETM1VM-228	E CAPACITOR	2200uF 35V M	
C956	QETN1AM-108Z	E CAPACITOR	1000uF 10V M	
C957	QETN1AM-477Z	E CAPACITOR	470uF 10V M	
C959	QFVF1HJ-684Z	MF CAPACITOR	0.68uF 50V J	
C960	QCZ0325-102	C CAPACITOR	1000pF 2kV K	
C968	QETN1AM-108Z	E CAPACITOR	1000uF 10V M	
⚠C991	QCZ9079-102	C CAPACITOR	1000pF AC250V M	
⚠C993	QCZ9079-471	C CAPACITOR	470pF AC250V K	
⚠C994	QCZ9079-471	C CAPACITOR	470pF AC250V K	
⚠C995	QCZ9079-471	C CAPACITOR	470pF AC250V K	
R401	QRE141J-562Y	C RESISTOR	5.6kΩ 1/4W J	
R402	QRE141J-562Y	C RESISTOR	5.6kΩ 1/4W J	
R403	QRE141J-222Y	C RESISTOR	2.2kΩ 1/4W J	
R404	QRT01EJ-1R0X	MF RESISTOR	1Ω 1W J	
R405	QRL02EJ-271X	OMF RESISTOR	270Ω 2W J	
R406	QRE141J-222Y	C RESISTOR	2.2kΩ 1/4W J	
R407	QRX01GJ-1R0	MF RESISTOR	1Ω 1W J	
R408	QRE121J-3R3Y	C RESISTOR	3.3Ω 1/2W J	
R409	QRE141J-823Y	C RESISTOR	82kΩ 1/4W J	
R410	QRE141J-103Y	C RESISTOR	10kΩ 1/4W J	
R461	QRG029J-820	OMF RESISTOR	82Ω 2W J	
R462	QRE141J-473Y	C RESISTOR	47kΩ 1/4W J	
R463	QRE141J-682Y	C RESISTOR	6.8kΩ 1/4W J	
R464	QRX01GJ-2R7	MF RESISTOR	2.7Ω 1W J	
R468	QRE141J-102Y	C RESISTOR	1kΩ 1/4W J	
R469	QRE141J-272Y	C RESISTOR	2.7kΩ 1/4W J	
R471	QRE141J-391Y	C RESISTOR	390Ω 1/4W J	
R472	QRA14CF-1002Y	CMF RESISTOR	10kΩ 1/4W F	
R473	QRE141J-473Y	C RESISTOR	47kΩ 1/4W J	
R474	QRE141J-103Y	C RESISTOR	10kΩ 1/4W J	
R475	QRE141J-102Y	C RESISTOR	1kΩ 1/4W J	
R476	QRE141J-102Y	C RESISTOR	1kΩ 1/4W J	
R477	QRE141J-563Y	C RESISTOR	56kΩ 1/4W J	
R478	QRE141J-333Y	C RESISTOR	33kΩ 1/4W J	
R481	QRE141J-684Y	C RESISTOR	680kΩ 1/4W J	
R482	QRE141J-103Y	C RESISTOR	10kΩ 1/4W J	
R483	QRE141J-333Y	C RESISTOR	33kΩ 1/4W J	
R501	QRE141J-471Y	C RESISTOR	470Ω 1/4W J	
R502	QRE141J-123Y	C RESISTOR	12kΩ 1/4W J	
R503	QRE121J-152Y	C RESISTOR	1.5kΩ 1/2W J	
R504	QRL03EJ-272X	OMF RESISTOR	2.7kΩ 3W J	
R505	QRL03EJ-222X	OMF RESISTOR	2.2kΩ 3W J	
R506	QRE121J-5R6Y	C RESISTOR	5.6Ω 1/2W J	
R521	QRE121J-471Y	C RESISTOR	470Ω 1/2W J	
R522	QRE141J-333Y	C RESISTOR	33kΩ 1/4W J	
R523	QRE141J-103Y	C RESISTOR	10kΩ 1/4W J	
R524	QRL029J-152	OMF RESISTOR	1.5kΩ 2W J	
R541	QRE141J-222Y	C RESISTOR	2.2kΩ 1/4W J	
R542	QRE141J-152Y	C RESISTOR	1.5kΩ 1/4W J	
R543	QRE121J-272Y	C RESISTOR	2.7kΩ 1/2W J	
⚠R551	QRZ9023-3R3	FUSIBLE RESISTOR	3.3Ω	
⚠R552	QRZ9023-1R8	FUSIBLE RESISTOR	1.8Ω	
⚠R553	QRZ9011-4R7	FUSI RESISTOR	4.7Ω 1/2W J	
⚠R555	QRZ9022-R33	FUSI RESISTOR	0.33Ω 1W K	
R581	QRF154K-4R7	UNF WW RESISTOR	4.7Ω 15W K	
R582	QRE141J-681Y	C RESISTOR	680Ω 1/4W J	
R583	QRE121J-682Y	C RESISTOR	6.8kΩ 1/2W J	
R584	QRE141J-183Y	C RESISTOR	18kΩ 1/4W J	
R585	QRE141J-222Y	C RESISTOR	2.2kΩ 1/4W J	
R902	QRF054K-3R3	UNF WW RESISTOR	3.3Ω 5W K	
R903	QRF154K-1R8	UNF WW RESISTOR	1.8Ω 15W K	
R904	QRL039J-683	OMF RESISTOR	68kΩ 3W J	
R905	QRE121J-394Y	C RESISTOR	390kΩ 1/2W J	
R906	QRE121J-394Y	C RESISTOR	390kΩ 1/2W J	
R908	QRL039J-823	OMF RESISTOR	82kΩ 3W J	
R909	QRL039J-823	OMF RESISTOR	82kΩ 3W J	
R910	QRE121J-330Y	C RESISTOR	33Ω 1/2W J	
R911	QRE121J-152Y	C RESISTOR	1.5kΩ 1/2W J	
R912	QRE121J-152Y	C RESISTOR	1.5kΩ 1/2W J	
R913	QRT02EJ-R27X	MF RESISTOR	0.27Ω 2W J	
R914	QRM059J-R10	MP RESISTOR	0.1Ω 5W J	
R915	QRE121J-221Y	C RESISTOR	220Ω 1/2W J	
R916	QRE121J-152Y	C RESISTOR	1.5kΩ 1/2W J	
R917	QRE141J-154Y	C RESISTOR	150kΩ 1/4W J	
R918	QRE141J-273Y	C RESISTOR	27kΩ 1/4W J	
⚠R932	QRZ9017-470	FUSI RESISTOR	47Ω 1/4W J	
R933	QRE121J-474Y	C RESISTOR	470kΩ 1/2W J	
R934	QRE141J-332Y	C RESISTOR	3.3kΩ 1/4W J	
R935	QRX01GJ-4R7	MF RESISTOR	4.7Ω 1W J	
R936	QRE121J-681Y	C RESISTOR	680Ω 1/2W J	
R941	QRE121J-330Y	C RESISTOR	33Ω 1/2W J	
R942	QRE141J-223Y	C RESISTOR	22kΩ 1/4W J	
R943	QRE141J-473Y	C RESISTOR	47kΩ 1/4W J	
R944	QRE141J-103Y	C RESISTOR	10kΩ 1/4W J	
R945	QRE141J-563Y	C RESISTOR	56kΩ 1/4W J	
R946	QRE141J-392Y	C RESISTOR	3.9kΩ 1/4W J	
R949	QRE141J-334Y	C RESISTOR	330kΩ 1/4W J	
R950	QRE141J-221Y	C RESISTOR	220Ω 1/4W J	
R951	QRE121J-222Y	C RESISTOR	2.2kΩ 1/2W J	
R952	QRL039J-223	OMF RESISTOR	22kΩ 3W J	
R953	QRT039J-R33	MF RESISTOR	0.33Ω 3W J	
R981	QRE141J-153Y	C RESISTOR	15kΩ 1/4W J	
R982	QRE141J-102Y	C RESISTOR	1kΩ 1/4W J	
R983	QRE141J-101Y	C RESISTOR	100Ω 1/4W J	
⚠R991	QRZ9046-825Z	C RESISTOR	8.2MΩ 1/2W K	
L461	QQR1195-001	LINE FILTER		
L462	QQLZ028-272	COIL	2.7mH	
L521	QQLZ031-180	CHOKE COIL	18uH	
L522	QQR1196-001	LINE FILTER		
L942	QQL26AK-220Z	CHOKE COIL	22uH K	
L951	QQLZ026-460	COIL	46uH ±7%	
T501	QQR1431-001	DRIVE TRANSF		
⚠T901	QQS0235-001	SW TRANSF		
⚠T931	QQS0173-001	SW TRANSF		
CN003	QGB1506M1-16	CONNECTOR	B-B (1-16)	
CN004	QGB1506M1-16	CONNECTOR	B-B (1-16)	
CN005	QGB1506M1-16	CONNECTOR	B-B (1-16)	
CN0E1	CE41507-001P	LV CONNECTOR		
CN0HV	CHC802T-05N-T	LV CONNECTOR		
⚠CP931	QMFZ043-2R0Z-J1	FUSE	2A AC250V	
⚠CP941	ICP-N25-Y	IC PROTECTOR	1.0A	
⚠CP951	ICP-N75-Y	IC PROTECTOR	2.7A	
⚠CP952	ICP-N75-Y	IC PROTECTOR	2.7A	
⚠CP954	ICP-N75-Y	IC PROTECTOR	2.7A	
HS401	LC31695-001A	HEAT SINK/AL-F/		
HS461	CEHT11B-002QS	HEAT SINK		
HS521	LC31212-002A	HEAT SINK/AL-F/		
HS522	CEHT11B-006QS	HEAT SINK		
HS901	LC30774-001A	HEAT SINK/AL-F/		
HS956	CEHT11B-002QS	HEAT SINK		
HS961	CEHT11B-002QS	HEAT SINK		
K401	QQR0621-002Z	FERRITE BEADS		
K522	CE41832-001	LEAD CORE		
K523	CE41832-001	LEAD CORE		
K524	CE41832-001	LEAD CORE		
K525	CE41832-001	LEAD CORE		
K901	QQR0679-001	FERRITE BEADS		
K952	QQR0621-002Z	FERRITE BEADS		
K953	QQR0621-002Z	FERRITE BEADS		
K956	QQR0621-002Z	FERRITE BEADS		
⚠LF901	QQR1433-001	LINE FILTER		
⚠PC901	PC123Y22	PHOTO COUPLER		
⚠PC931	PC123Y22	PHOTO COUPLER		
⚠RY901	QSK0061-001	RELAY		
⚠RY931	QSK0099-001	RELAY		
⚠RY932	QSK0099-001	RELAY		
⚠TH901	QAD0145-2R3	P THERMISTOR	2.3Ω	

CRT SOKET P.W. BOARD ASS'Y (SML-3503A-H2)

⚠Ref No.	Part No.	Part Name	Description	Local
IC201	TDA6111Q	IC		
IC202	TDA6111Q	IC		
IC203	TDA6111Q	IC		
Q104	2SC2412K/QR/-X	TRANSISTOR		
Q105	KTC3199/YG/-T	TRANSISTOR		
Q108	2SA1837	POW TRANSISTOR		
Q109	2SC4793	POW TRANSISTOR		
Q110	KTA1267/YG/-T	TRANSISTOR		
Q301	2SA1530A/QR/-X	TRANSISTOR		
Q302	2SC2412K/QR/-X	TRANSISTOR		
Q303	2SA1530A/QR/-X	TRANSISTOR		
D102	MA111-X	SI DIODE		

⚠Ref No.	Part No.	Part Name	Description Local
D103	RH1S-T3	SI DIODE	
D104	RH1S-T3	SI DIODE	
D105	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J
D204	EU01N-T2	SI DIODE	
D205	EU01N-T2	SI DIODE	
D206	EU01N-T2	SI DIODE	
D208	1SR124-400A-T2	SI DIODE	
D209	1SR124-400A-T2	SI DIODE	
D210	1SR124-400A-T2	SI DIODE	
D211	MA8062/M/-X	Z DIODE	
D212	MA8130/H/-X	Z DIODE	
D213	MA8130/H/-X	Z DIODE	
D214	MA8130/H/-X	Z DIODE	
D215	MTZJ12C-T2	Z DIODE	
D301	MA111-X	SI DIODE	
D302	MA111-X	SI DIODE	
D303	MA111-X	SI DIODE	
C106	QETN1HM-335Z	E CAPACITOR	3.3uF 50V M
C107	QETN1CM-107Z	E CAPACITOR	100uF 16V M
C110	QETN2CM-106Z	E CAPACITOR	10uF 160V M
C111	QCB32HK-472Z	C CAPACITOR	4700pF 500V K
C113	QETN2CM-106Z	E CAPACITOR	10uF 160V M
C114	QCB32HK-472Z	C CAPACITOR	4700pF 500V K
C116	QETN1AM-107Z	E CAPACITOR	100uF 10V M
C117	QETN1AM-107Z	E CAPACITOR	100uF 10V M
C118	QETN1AM-337Z	E CAPACITOR	330uF 10V M
C120	NCB31HK-222X	C CAPACITOR	2200pF 50V K
C123	NCB31HK-222X	C CAPACITOR	2200pF 50V K
C124	NDC31HJ-101X	C CAPACITOR	100pF 50V J
C201	NDC31HJ-100X	C CAPACITOR	10pF 50V J
C202	NDC31HJ-100X	C CAPACITOR	10pF 50V J
C203	NDC31HJ-100X	C CAPACITOR	10pF 50V J
C204	NCF31CZ-104X	C CAPACITOR	0.1uF 16V Z
C205	NCF31CZ-104X	C CAPACITOR	0.1uF 16V Z
C206	NCF31CZ-104X	C CAPACITOR	0.1uF 16V Z
C207	QETN1EM-476Z	E CAPACITOR	47uF 25V M
C208	QETN1EM-476Z	E CAPACITOR	47uF 25V M
C209	QETN1EM-476Z	E CAPACITOR	47uF 25V M
C210	QFKC2EK-104Z	MM CAPACITOR	0.1uF 250V K
C211	QFKC2EK-104Z	MM CAPACITOR	0.1uF 250V K
C212	QFKC2EK-104Z	MM CAPACITOR	0.1uF 250V K
C213	NDC31HJ-181X	C CAPACITOR	180pF 50V J
C214	NDC31HJ-181X	C CAPACITOR	180pF 50V J
C215	NDC31HJ-181X	C CAPACITOR	180pF 50V J
C216	QETN1CM-107Z	E CAPACITOR	100uF 16V M
C218	QETM2EM-336	E CAPACITOR	33uF 250V M
C219	QCZ0131-222	C CAPACITOR	2200pF 2kV K
C221	QETM2EM-106	E CAPACITOR	10uF 250V M
C222	NDC31HJ-181X	C CAPACITOR	180pF 50V J
C223	NDC31HJ-181X	C CAPACITOR	180pF 50V J
C301	QFLC1HJ-273Z	M CAPACITOR	0.027uF 50V J
R103	NRSA63J-101X	MG RESISTOR	100Ω 1/16W J
R108	QRE121J-100Y	C RESISTOR	10Ω 1/2W J
R109	NRSA63J-123X	MG RESISTOR	12kΩ 1/16W J
R112	NRSA63J-272X	MG RESISTOR	2.7kΩ 1/16W J
R114	NRSA63J-152X	MG RESISTOR	1.5kΩ 1/16W J
R115	NRSA63J-680X	MG RESISTOR	68Ω 1/16W J
R117	NRSA63J-391X	MG RESISTOR	390Ω 1/16W J
R122	NRSA63J-122X	MG RESISTOR	1.2kΩ 1/16W J
R123	QRE121J-563Y	C RESISTOR	56kΩ 1/2W J
R124	NRSA63J-470X	MG RESISTOR	47Ω 1/16W J
R125	QRE121J-563Y	C RESISTOR	56kΩ 1/2W J
R126	NRSA63J-470X	MG RESISTOR	47Ω 1/16W J
R127	NRSA63J-122X	MG RESISTOR	1.2kΩ 1/16W J
R128	NRSA63J-390X	MG RESISTOR	39Ω 1/16W J
R129	QRE121J-2R7Y	C RESISTOR	2.7Ω 1/2W J
R130	QRE121J-2R7Y	C RESISTOR	2.7Ω 1/2W J
R131	NRSA63J-390X	MG RESISTOR	39Ω 1/16W J
R132	NRSA63J-121X	MG RESISTOR	120Ω 1/16W J
R133	QRL029J-681	OMF RESISTOR	680Ω 2W J
⚠R134	QRZ9021-561	FUSI RESISTOR	560Ω 1W J
R204	NRSA63J-681X	MG RESISTOR	680Ω 1/16W J
R205	NRSA63J-681X	MG RESISTOR	680Ω 1/16W J
R206	NRSA63J-681X	MG RESISTOR	680Ω 1/16W J
R211	NRSA63J-154X	MG RESISTOR	150kΩ 1/16W J
R223	NRSA63J-272X	MG RESISTOR	2.7kΩ 1/16W J
R224	NRSA63J-272X	MG RESISTOR	2.7kΩ 1/16W J
R225	NRSA63J-272X	MG RESISTOR	2.7kΩ 1/16W J
R227	NRSA63J-103X	MG RESISTOR	10kΩ 1/16W J
R228	NRSA63J-272X	MG RESISTOR	2.7kΩ 1/16W J
R229	QRL029J-104-M	OMF RESISTOR	100kΩ 2W J
R230	QRL029J-104-M	OMF RESISTOR	100kΩ 2W J
R231	QRL029J-104-M	OMF RESISTOR	100kΩ 2W J
R232	NRSA63J-332X	MG RESISTOR	3.3kΩ 1/16W J
R233	NRSA63J-332X	MG RESISTOR	3.3kΩ 1/16W J

⚠Ref No.	Part No.	Part Name	Description Local
R234	NRSA63J-332X	MG RESISTOR	3.3kΩ 1/16W J
R235	QRC121K-152Z	COMP RESISTOR	1.5kΩ 1/2W K
R236	QRC121K-152Z	COMP RESISTOR	1.5kΩ 1/2W K
R237	QRC121K-152Z	COMP RESISTOR	1.5kΩ 1/2W K
R239	QRZ0107-474Z	C RESISTOR	470kΩ 1/2W K
R241	QRZ0107-105Z	C RESISTOR	1MΩ 1/2W K
R242	NRSA63J-103X	MG RESISTOR	10kΩ 1/16W J
R244	NRSA63J-102X	MG RESISTOR	1kΩ 1/16W J
R245	NRSA63J-562X	MG RESISTOR	5.6kΩ 1/16W J
R246	NRSA63J-562X	MG RESISTOR	5.6kΩ 1/16W J
R247	NRSA63J-562X	MG RESISTOR	5.6kΩ 1/16W J
R301	QRE121J-474Y	C RESISTOR	470kΩ 1/2W J
R302	QRE121J-474Y	C RESISTOR	470kΩ 1/2W J
R303	NRSA63J-223X	MG RESISTOR	22kΩ 1/16W J
R304	NRSA63J-223X	MG RESISTOR	22kΩ 1/16W J
R305	NRSA63J-562X	MG RESISTOR	5.6kΩ 1/16W J
R306	NRSA63J-392X	MG RESISTOR	3.9kΩ 1/16W J
R307	NRSA63J-102X	MG RESISTOR	1kΩ 1/16W J
R308	NRSA63J-100X	MG RESISTOR	10Ω 1/16W J
R310	NRSA63J-331X	MG RESISTOR	330Ω 1/16W J
L102	QQL26AK-820Z	CHOKE COIL	82uH K
L201	QQL244K-4R7Z	PEAKING COIL	4.7uH K
L202	QQL244K-4R7Z	PEAKING COIL	4.7uH K
L203	QQL244K-4R7Z	PEAKING COIL	4.7uH K
L204	QQL26AJ-102Z	PEAKING COIL	1mH J
CN00G	QJK002-063631	SIN CR C-B WIRE	
CN00R	QJK002-103840	SIN CR C-B WIRE	
CN0E1	CHGT0015-0C	RECEP WIRE ASSY	
CN0VM	WJM0048-002A	E-SI C WIRE C-F	
HS101	CEHP00N-001QS	HEAT SINK	
HS102	CEHP00N-001QS	HEAT SINK	
HS201	LC31150-002A	HEAT SINK/AL-F1	
HS202	LC31150-002A	HEAT SINK/AL-F1	
HS203	LC31150-002A	HEAT SINK/AL-F1	
K101	CE41492-001Z	CHOKE COIL	
K103	CE41492-001Z	CHOKE COIL	
K104	CE41832-001	LEAD CORE	
K105	QQR0621-002Z	FERRITE BEADS	
K106	CE41832-001	LEAD CORE	
K107	CE41832-001	LEAD CORE	
SG201	QAF0056-501Z	SURGE ABSORBER	500V M
SG202	QAF0056-501Z	SURGE ABSORBER	500V M
SG203	QAF0056-501Z	SURGE ABSORBER	500V M
⚠SK001	QNZ0536-001	CRT SOCKET	

FRONT CONTROL P.W. BOARD ASS'Y (SML-8502A-H2)

⚠Ref No.	Part No.	Part Name	Description Local
IC801	GP1U281Q	IR DETECT UNIT	38kHz
Q802	DTC124EKA-X	DIGI TRANSISTOR	
Q803	DTA124EKA-X	DIGI TRANSISTOR	
Q804	DTA124EKA-X	DIGI TRANSISTOR	
D801	MA111-X	SI DIODE	
D802	MA111-X	SI DIODE	
D803	MA111-X	SI DIODE	
D804	MA111-X	SI DIODE	
D805	MA111-X	SI DIODE	
D806	MA111-X	SI DIODE	
D810	SPR-39MVWF	LED	POWER
D811	MA111-X	SI DIODE	
D814	MA8068/M/-X	Z DIODE	
C801	QETM1VM-108	E CAPACITOR	1000uF 35V M
C802	QETM1VM-108	E CAPACITOR	1000uF 35V M
C804	NCB31CK-104X	C CAPACITOR	0.1uF 16V K
C806	NCB31HK-102X	C CAPACITOR	1000pF 50V K
C810	NCB31HK-472X	C CAPACITOR	4700pF 50V K
C811	NCB31HK-472X	C CAPACITOR	4700pF 50V K
C822	QETN1EM-476Z	E CAPACITOR	47uF 25V M
⚠C902	QFZ9072-224	MM CAPACITOR	0.22uF AC250V K
⚠C903	QFZ9072-474	MM CAPACITOR	0.47uF AC250V K
R801	QRE121J-271Y	C RESISTOR	270Ω 1/2W J
R802	QRE121J-271Y	C RESISTOR	270Ω 1/2W J
R805	NRSA63J-221X	MG RESISTOR	220Ω 1/16W J
R808	NRSA63J-102X	MG RESISTOR	1kΩ 1/16W J
R821	NRSA63J-102X	MG RESISTOR	1kΩ 1/16W J
R822	NRSA63J-102X	MG RESISTOR	1kΩ 1/16W J
R839	NRSA63J-331X	MG RESISTOR	330Ω 1/16W J

⚠Ref No.	Part No.	Part Name	Description Local
CN00B	QGF1220C2-19	CONNECTOR	FFC/FPC (1-19)
CN00W	CHGH0001-0H	CONNECTOR ASSY	
⚠CN0C1	CHGH0001-0E-GS	CONNECTOR ASSY	
CN0J1	QJB003-081003	SIN ID C-B WIRE	
⚠F901	QMF51E2-5R0S	FUSE	5A AC250V
J801	QNS0155-001	3.5 JACK	HEADPHONE
J803	QMCC004-C01	MINI DIN JACK	S IN
J804	CEMN011-001	PIN JACK	V IN
J805	CEMN011-002	PIN JACK	L/MONO IN
J806	CEMN011-003	PIN JACK	R IN
LC802	QQR1199-001	EMI FILTER	
⚠LF902	QQR1433-001	LINE FILTER	
S801	QSW0619-003Z	TACT SWITCH	MENU
S802	QSW0619-003Z	TACT SWITCH	CH-
S803	QSW0619-003Z	TACT SWITCH	CH+
S804	QSW0619-003Z	TACT SWITCH	VOL-
S805	QSW0619-003Z	TACT SWITCH	VOL+
S806	QSW0619-003Z	TACT SWITCH	TV/VIDEO
⚠S901	QSW0750-001	PUSH SWITCH	MAIN POWER
⚠VA901	QAF0052-621	VARISTOR	620V

AV JACK P.W. BOARD ASS'Y (SML0J505A-H2)

⚠Ref No.	Part No.	Part Name	Description Local
Q002	2SC2412K/QR/-X	TRANSISTOR	
Q003	2SC2412K/QR/-X	TRANSISTOR	
Q006	2SC2412K/QR/-X	TRANSISTOR	
D001	MA3120/M/-X	Z DIODE	
D002	MA3120/M/-X	Z DIODE	
D003	MA3120/M/-X	Z DIODE	
C001	NCB31HK-152X	C CAPACITOR	1500pF 50V K
C002	NCB31HK-152X	C CAPACITOR	1500pF 50V K
C008	NCB31HK-152X	C CAPACITOR	1500pF 50V K
C009	NCB31HK-152X	C CAPACITOR	1500pF 50V K
C010	QETN1HM-106Z	E CAPACITOR	10uF 50V M
C011	NCB31HK-152X	C CAPACITOR	1500pF 50V K
C012	NCB31HK-152X	C CAPACITOR	1500pF 50V K
C014	NCB31HK-472X	C CAPACITOR	4700pF 50V K
C015	NCB31HK-472X	C CAPACITOR	4700pF 50V K
C016	QETN1HM-106Z	E CAPACITOR	10uF 50V M
C017	QETN1HM-106Z	E CAPACITOR	10uF 50V M
C018	QETN1HM-106Z	E CAPACITOR	10uF 50V M
R001	NRSA63J-750X	MG RESISTOR	75Ω 1/16W J
R002	NRSA63J-333X	MG RESISTOR	33kΩ 1/16W J
R003	NRSA63J-750X	MG RESISTOR	75Ω 1/16W J
R004	NRSA63J-750X	MG RESISTOR	75Ω 1/16W J
R014	NRSA63J-750X	MG RESISTOR	75Ω 1/16W J
R015	NRSA63J-223X	MG RESISTOR	22kΩ 1/16W J
R016	NRSA63J-750X	MG RESISTOR	75Ω 1/16W J
R017	NRSA63J-223X	MG RESISTOR	22kΩ 1/16W J
R018	NRSA63J-750X	MG RESISTOR	75Ω 1/16W J
R019	NRSA63J-750X	MG RESISTOR	75Ω 1/16W J
R022	NRSA63J-471X	MG RESISTOR	470Ω 1/16W J
R023	NRSA63J-223X	MG RESISTOR	22kΩ 1/16W J
R024	NRSA63J-153X	MG RESISTOR	15kΩ 1/16W J
R025	NRSA63J-222X	MG RESISTOR	2.2kΩ 1/16W J
R032	NRSA63J-223X	MG RESISTOR	22kΩ 1/16W J
R033	NRSA63J-153X	MG RESISTOR	15kΩ 1/16W J
R034	NRSA63J-222X	MG RESISTOR	2.2kΩ 1/16W J
CN001	QGB1505K1-35	CONNECTOR	B-B (1-35)
J001	QNZ0454-001	AV JACK	VIDEO1
J002	QNN0349-001	PIN JACK	VIDEO2
J003	QNN0349-002	PIN JACK	VIDEO3/COMP
J004	QNN0348-001	PIN JACK	VIDEO3/COMP
J005	QNN0349-001	PIN JACK	LINE OUT

MICON/100HZ P.W. BOARD ASS'Y (SML0Z504A-H2)

⚠Ref No.	Part No.	Part Name	Description Local
IC001	SDA6000-B12	IC	
IC002	S-80828CNNB-W	IC	
IC003	K4S641632H-TC75	IC(DIGITAL)	
IC004	MBV160-29JH24	IC(MICRO C ROM)	(SERVICE)
IC191	PQ2L3252MS-X	IC	
IC201	VSP9405B-VK-B11	IC	
IC301	DDP3315C-QA-G3	IC	
IC901	R1170H181B-X	IC	
IC902	MM1563DF-X	IC	
IC903	MM1565AF-X	IC	
Q013	2SK1830-X	MOS FET	
Q014	2SK1830-X	MOS FET	
Q201	2SA1530A/QR/-X	TRANSISTOR	
Q202	2SA1530A/QR/-X	TRANSISTOR	
Q203	2SA1530A/QR/-X	TRANSISTOR	
Q301	2SA1530A/QR/-X	TRANSISTOR	
Q302	2SC3928A/QR/-X	TRANSISTOR	
Q304	2SC4672/PQ/-W	POW TRANSISTOR	
Q305	2SA1530A/QR/-X	TRANSISTOR	
Q306	2SA1530A/QR/-X	TRANSISTOR	
Q307	2SA1530A/QR/-X	TRANSISTOR	
QA004	UMT1N-W	PAIR TRANSISTOR	
QA301	UMX1N-W	PAIR TRANSISTOR	
QA302	UMT1N-W	PAIR TRANSISTOR	
D001	MA111-X	SI DIODE	
D005	RSA6.1J4-W	SI DIODE	
D006	MA3039/H/-X	Z DIODE	
D007	MA3039/H/-X	Z DIODE	
D301	DA221-X	DIODE ARRAY	
D302	DA221-X	DIODE ARRAY	
D303	DA221-X	DIODE ARRAY	
D304	DA221-X	DIODE ARRAY	
D305	MA111-X	SI DIODE	
D306	DA221-X	DIODE ARRAY	
D307	MA3039/H/-X	Z DIODE	
D308	MA3033-X	CHIP ZENER DIODE	
C001	NCB31HK-104X	C CAPACITOR	0.1uF 50V K
C019	NEH71CM-476X	E CAPACITOR	47uF 16V M
C020	NCB31HK-104X	C CAPACITOR	0.1uF 50V K
C023	NCB31EK-333X	C CAPACITOR	0.033uF 25V K
C024	NCB31HK-104X	C CAPACITOR	0.1uF 50V K
C025	NCB31EK-333X	C CAPACITOR	0.033uF 25V K
C027	NEH71CM-476X	E CAPACITOR	47uF 16V M
C028	NEH70GM-227X	E CAPACITOR	220uF 4V M
C029	NDC31HJ-151X	C CAPACITOR	150pF 50V J
C030	NCB31HK-104X	C CAPACITOR	0.1uF 50V K
C031	NCB31HK-104X	C CAPACITOR	0.1uF 50V K
C032	NCB31HK-104X	C CAPACITOR	0.1uF 50V K
C034	NCB31HK-104X	C CAPACITOR	0.1uF 50V K
C035	NCB31HK-104X	C CAPACITOR	0.1uF 50V K
C036	NCB31HK-104X	C CAPACITOR	0.1uF 50V K
C037	NCB31HK-104X	C CAPACITOR	0.1uF 50V K
C038	NCB31HK-104X	C CAPACITOR	0.1uF 50V K
C039	NCB31HK-104X	C CAPACITOR	0.1uF 50V K
C040	NDC31HJ-330X	C CAPACITOR	33pF 50V J
C041	NDC31HJ-330X	C CAPACITOR	33pF 50V J
C042	NCB31HK-104X	C CAPACITOR	0.1uF 50V K
C043	NCB31HK-104X	C CAPACITOR	0.1uF 50V K
C045	NCB31HK-104X	C CAPACITOR	0.1uF 50V K
C046	NCB31HK-104X	C CAPACITOR	0.1uF 50V K
C047	NCB31HK-104X	C CAPACITOR	0.1uF 50V K
C048	NEH71CM-476X	E CAPACITOR	47uF 16V M
C049	NCB31HK-104X	C CAPACITOR	0.1uF 50V K
C050	NCB31HK-104X	C CAPACITOR	0.1uF 50V K
C051	NEH71CM-476X	E CAPACITOR	47uF 16V M
C052	NCB31HK-104X	C CAPACITOR	0.1uF 50V K
C053	NCB31HK-104X	C CAPACITOR	0.1uF 50V K
C054	NCB31HK-104X	C CAPACITOR	0.1uF 50V K
C055	NCB31HK-104X	C CAPACITOR	0.1uF 50V K
C056	NCB31HK-104X	C CAPACITOR	0.1uF 50V K
C057	NCB31HK-104X	C CAPACITOR	0.1uF 50V K
C058	NCB31HK-104X	C CAPACITOR	0.1uF 50V K
C059	NEH71CM-106X	E CAPACITOR	10uF 16V M
C060	NEH71CM-106X	E CAPACITOR	10uF 16V M
C061	NEH71CM-106X	E CAPACITOR	10uF 16V M
C062	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J
C066	NCB31HK-104X	C CAPACITOR	0.1uF 50V K
C067	NCB31HK-104X	C CAPACITOR	0.1uF 50V K
C068	NCB31HK-104X	C CAPACITOR	0.1uF 50V K
C191	NEH70GM-227X	E CAPACITOR	220uF 4V M
C192	NCB20JK-225X	C CAPACITOR	2.2uF 6.3V K
C193	NCB20JK-225X	C CAPACITOR	2.2uF 6.3V K
C194	NCB31CK-104X	C CAPACITOR	0.1uF 16V K
C195	NEH70JM-107X	E CAPACITOR	100uF 6.3V M
C196	NCB20JK-225X	C CAPACITOR	2.2uF 6.3V K
C197	NEH70GM-227X	E CAPACITOR	220uF 4V M
C204	NCB31HK-104X	C CAPACITOR	0.1uF 50V K
C205	NCB31HK-473X	C CAPACITOR	0.047uF 50V K

⚠Ref No.	Part No.	Part Name	Description Local
C206	NCB31HK-104X	C CAPACITOR	0.1uF 50V K
C207	NCB31HK-473X	C CAPACITOR	0.047uF 50V K
C208	NCF31AZ-105X	C CAPACITOR	1uF 10V Z
C209	NCB31HK-473X	C CAPACITOR	0.047uF 50V K
C210	NCF31AZ-105X	C CAPACITOR	1uF 10V Z
C211	NCB31HK-104X	C CAPACITOR	0.1uF 50V K
C212	NCB31HK-473X	C CAPACITOR	0.047uF 50V K
C213	NCF31AZ-105X	C CAPACITOR	1uF 10V Z
C214	NCB31AK-334X	C CAPACITOR	0.33uF 10V K
C215	NCB31HK-104X	C CAPACITOR	0.1uF 50V K
C219	NCB31HK-103X	C CAPACITOR	0.01uF 50V K
C220	NCF31AZ-105X	C CAPACITOR	1uF 10V Z
C221	NCF31AZ-105X	C CAPACITOR	1uF 10V Z
C222	NCF31AZ-105X	C CAPACITOR	1uF 10V Z
C223	NCF31AZ-105X	C CAPACITOR	1uF 10V Z
C224	NCF31AZ-105X	C CAPACITOR	1uF 10V Z
C225	NDC31HJ-390X	C CAPACITOR	39pF 50V J
C226	NDC31HJ-390X	C CAPACITOR	39pF 50V J
C227	NCF31AZ-105X	C CAPACITOR	1uF 10V Z
C228	NCF31AZ-105X	C CAPACITOR	1uF 10V Z
C229	NCF31AZ-105X	C CAPACITOR	1uF 10V Z
C230	NCF31AZ-105X	C CAPACITOR	1uF 10V Z
C231	NCF31AZ-105X	C CAPACITOR	1uF 10V Z
C301	NEH71CM-226X	E CAPACITOR	22uF 16V M
C303	NDC31HJ-180X	C CAPACITOR	18pF 50V J
C304	NDC31HJ-180X	C CAPACITOR	18pF 50V J
C305	NEH71HM-105X	E CAPACITOR	1uF 50V M
C306	NCF31AZ-105X	C CAPACITOR	1uF 10V Z
C307	NDC31HJ-561X	C CAPACITOR	560pF 50V J
C308	NEH71HM-105X	E CAPACITOR	1uF 50V M
C309	NCF31AZ-105X	C CAPACITOR	1uF 10V Z
C311	NDC31HJ-150X	C CAPACITOR	15pF 50V J
C312	NCB31HK-562X	C CAPACITOR	5600pF 50V K
C313	NCB31HK-333X	C CAPACITOR	0.033uF 50V K
C314	NCB31HK-333X	C CAPACITOR	0.033uF 50V K
C315	NCB30JK-225X	C CAPACITOR	2.2uF 6.3V K
C316	NCB30JK-105X	C CAPACITOR	1uF 6.3V K
C319	NCB31HK-103X	C CAPACITOR	0.01uF 50V K
C320	NCB31HK-103X	C CAPACITOR	0.01uF 50V K
C321	NCB31HK-103X	C CAPACITOR	0.01uF 50V K
C322	NEH71HM-335X	E CAPACITOR	3.3uF 50V M
C323	NCB31HK-104X	C CAPACITOR	0.1uF 50V K
C324	NCF31AZ-105X	C CAPACITOR	1uF 10V Z
C325	NEH71CM-106X	E CAPACITOR	10uF 16V M
C329	NCB31HK-104X	C CAPACITOR	0.1uF 50V K
C330	NEH71CM-106X	E CAPACITOR	10uF 16V M
C331	NCB31HK-682X	C CAPACITOR	6800pF 50V K
C332	NCB31HK-104X	C CAPACITOR	0.1uF 50V K
C333	NEH71CM-106X	E CAPACITOR	10uF 16V M
C334	NDC31HJ-561X	C CAPACITOR	560pF 50V J
C335	NDC31HJ-561X	C CAPACITOR	560pF 50V J
C336	NDC31HJ-561X	C CAPACITOR	560pF 50V J
C338	NDC31HJ-102X	C CAPACITOR	1000pF 50V J
C901	NEH71CM-106X	E CAPACITOR	10uF 16V M
C902	NEH71CM-106X	E CAPACITOR	10uF 16V M
C903	NCB10JK-106X	C CAPACITOR	10uF 6.3V K
C904	NEH71CM-106X	E CAPACITOR	10uF 16V M
C905	NEH71CM-106X	E CAPACITOR	10uF 16V M
C906	NCB20JK-225X	C CAPACITOR	2.2uF 6.3V K
C907	NCF31AZ-105X	C CAPACITOR	1uF 10V Z
C908	NCF31AZ-105X	C CAPACITOR	1uF 10V Z
C909	NCB20JK-225X	C CAPACITOR	2.2uF 6.3V K
C910	NDC31HJ-471X	C CAPACITOR	470pF 50V J
C911	NEH71CM-106X	E CAPACITOR	10uF 16V M
C912	NCB11CK-225X	C CAPACITOR	2.2uF 16V K
C913	NCB20JK-225X	C CAPACITOR	2.2uF 6.3V K
C914	NDC31HJ-471X	C CAPACITOR	470pF 50V J
C915	NEH70JM-107X	E CAPACITOR	100uF 6.3V M
C916	NEH71CM-106X	E CAPACITOR	10uF 16V M
C917	NEH71CM-106X	E CAPACITOR	10uF 16V M
C918	NEH71CM-106X	E CAPACITOR	10uF 16V M
R001	NRSA63J-102X	MG RESISTOR	1kΩ 1/16W J
R002	NRSA63J-104X	MG RESISTOR	100kΩ 1/16W J
R003	NRSA63J-102X	MG RESISTOR	1kΩ 1/16W J
R004	NRSA63J-102X	MG RESISTOR	1kΩ 1/16W J
R005	NRSA63J-102X	MG RESISTOR	1kΩ 1/16W J
R018	NRSA63J-102X	MG RESISTOR	1kΩ 1/16W J
R019	NRSA63J-102X	MG RESISTOR	1kΩ 1/16W J
R020	NRSA63J-102X	MG RESISTOR	1kΩ 1/16W J
R024	NRSA63J-472X	MG RESISTOR	4.7kΩ 1/16W J
R027	NRSA63J-472X	MG RESISTOR	4.7kΩ 1/16W J
R030	NRSA63J-472X	MG RESISTOR	4.7kΩ 1/16W J
R032	NRSA63J-472X	MG RESISTOR	4.7kΩ 1/16W J
R034	NRSA63J-103X	MG RESISTOR	10kΩ 1/16W J
R035	NRSA63J-103X	MG RESISTOR	10kΩ 1/16W J
R036	NRSA63J-103X	MG RESISTOR	10kΩ 1/16W J

⚠Ref No.	Part No.	Part Name	Description Local
R037	NRSA63J-103X	MG RESISTOR	10kΩ 1/16W J
R038	NRSA63J-103X	MG RESISTOR	10kΩ 1/16W J
R042	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J
R043	NRSA63J-472X	MG RESISTOR	4.7kΩ 1/16W J
R044	NRSA63J-472X	MG RESISTOR	4.7kΩ 1/16W J
R054	NRSA63J-390X	MG RESISTOR	39Ω 1/16W J
R055	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J
R057	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J
R058	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J
R059	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J
R060	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J
R061	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J
R087	NRSA63J-221X	MG RESISTOR	220Ω 1/16W J
R089	NRSA63J-221X	MG RESISTOR	220Ω 1/16W J
R090	NRSA63J-221X	MG RESISTOR	220Ω 1/16W J
R091	NRSA63J-102X	MG RESISTOR	1kΩ 1/16W J
R092	NRSA63J-102X	MG RESISTOR	1kΩ 1/16W J
R093	NRSA63J-102X	MG RESISTOR	1kΩ 1/16W J
R094	NRSA63J-102X	MG RESISTOR	1kΩ 1/16W J
R095	NRSA63J-473X	MG RESISTOR	47kΩ 1/16W J
R096	NRSA63J-102X	MG RESISTOR	1kΩ 1/16W J
R097	NRSA63J-221X	MG RESISTOR	220Ω 1/16W J
R098	NRSA63J-221X	MG RESISTOR	220Ω 1/16W J
R099	NRSA63J-152X	MG RESISTOR	1.5kΩ 1/16W J
R100	NRSA63J-222X	MG RESISTOR	2.2kΩ 1/16W J
R101	NRSA63J-103X	MG RESISTOR	10kΩ 1/16W J
R112	NRSA63J-102X	MG RESISTOR	1kΩ 1/16W J
R113	NRSA63J-103X	MG RESISTOR	10kΩ 1/16W J
R114	NRSA63J-103X	MG RESISTOR	10kΩ 1/16W J
R115	NRSA63J-103X	MG RESISTOR	10kΩ 1/16W J
R116	NRSA63J-103X	MG RESISTOR	10kΩ 1/16W J
R124	NRSA63J-101X	MG RESISTOR	100Ω 1/16W J
R127	NRSA63J-103X	MG RESISTOR	10kΩ 1/16W J
R128	NRSA63J-103X	MG RESISTOR	10kΩ 1/16W J
R129	NRSA63J-823X	MG RESISTOR	82kΩ 1/16W J
R130	NRSA63J-104X	MG RESISTOR	100kΩ 1/16W J
R131	NRSA63J-102X	MG RESISTOR	1kΩ 1/16W J
R133	NRSA63J-473X	MG RESISTOR	47kΩ 1/16W J
R134	NRSA63J-473X	MG RESISTOR	47kΩ 1/16W J
R135	NRSA63J-102X	MG RESISTOR	1kΩ 1/16W J
R136	NRSA63J-103X	MG RESISTOR	10kΩ 1/16W J
R137	NRSA63J-222X	MG RESISTOR	2.2kΩ 1/16W J
R138	NRSA63J-222X	MG RESISTOR	2.2kΩ 1/16W J
R139	NRSA63J-222X	MG RESISTOR	2.2kΩ 1/16W J
R141	NRSA63J-103X	MG RESISTOR	10kΩ 1/16W J
R142	NRSA63J-101X	MG RESISTOR	100Ω 1/16W J
R143	NRSA63J-103X	MG RESISTOR	10kΩ 1/16W J
R147	NRSA63J-472X	MG RESISTOR	4.7kΩ 1/16W J
R151	NRSA63J-183X	MG RESISTOR	18kΩ 1/16W J
R152	NRSA63J-221X	MG RESISTOR	220Ω 1/16W J
R153	NRSA63J-221X	MG RESISTOR	220Ω 1/16W J
R154	NRSA63J-221X	MG RESISTOR	220Ω 1/16W J
R155	NRSA63J-101X	MG RESISTOR	100Ω 1/16W J
R156	NRSA63J-101X	MG RESISTOR	100Ω 1/16W J
R158	NRSA63J-221X	MG RESISTOR	220Ω 1/16W J
R165	NRSA63J-103X	MG RESISTOR	10kΩ 1/16W J
R169	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J
R170	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J
R171	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J
R172	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J
R174	NRSA63J-221X	MG RESISTOR	220Ω 1/16W J
R175	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J
R176	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J
R177	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J
R201	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J
R202	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J
R203	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J
R204	NRSA63J-222X	MG RESISTOR	2.2kΩ 1/16W J
R205	NRSA63J-222X	MG RESISTOR	2.2kΩ 1/16W J
R206	NRSA63J-222X	MG RESISTOR	2.2kΩ 1/16W J
R207	NRSA63J-222X	MG RESISTOR	2.2kΩ 1/16W J
R208	NRSA63J-222X	MG RESISTOR	2.2kΩ 1/16W J
R209	NRSA63J-222X	MG RESISTOR	2.2kΩ 1/16W J
R210	NRSA63J-222X	MG RESISTOR	2.2kΩ 1/16W J
R211	NRSA63J-222X	MG RESISTOR	2.2kΩ 1/16W J
R212	NRSA63J-222X	MG RESISTOR	2.2kΩ 1/16W J
R213	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J
R214	NRSA63J-101X	MG RESISTOR	100Ω 1/16W J
R215	NRSA63J-101X	MG RESISTOR	100Ω 1/16W J
R216	NRSA63J-102X	MG RESISTOR	1kΩ 1/16W J
R217	NRSA63J-682X	MG RESISTOR	6.8kΩ 1/16W J
R219	NRSA63J-103X	MG RESISTOR	10kΩ 1/16W J
R220	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J
R221	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J
R222	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J
R301	NRSA63J-562X	MG RESISTOR	5.6kΩ 1/16W J
R302	NRSA63J-103X	MG RESISTOR	10kΩ 1/16W J

⚠Ref No.	Part No.	Part Name	Description Local
R303	NRSA63J-223X	MG RESISTOR	22kΩ 1/16W J
R304	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J
R305	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J
R306	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J
R309	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J
R310	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J
R311	NRSA63J-683X	MG RESISTOR	68kΩ 1/16W J
R314	NRSA63J-471X	MG RESISTOR	470Ω 1/16W J
R315	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J
R318	NRSA63J-183X	MG RESISTOR	18kΩ 1/16W J
R319	NRSA63J-222X	MG RESISTOR	2.2kΩ 1/16W J
R320	NRSA63J-223X	MG RESISTOR	22kΩ 1/16W J
R321	NRSA63J-103X	MG RESISTOR	10kΩ 1/16W J
R322	NRSA63J-332X	MG RESISTOR	3.3kΩ 1/16W J
R323	NRSA63J-332X	MG RESISTOR	3.3kΩ 1/16W J
R324	NRSA63J-103X	MG RESISTOR	10kΩ 1/16W J
R325	NRSA63J-563X	MG RESISTOR	56kΩ 1/16W J
R326	NRSA63J-682X	MG RESISTOR	6.8kΩ 1/16W J
R327	NRSA63J-682X	MG RESISTOR	6.8kΩ 1/16W J
R328	NRSA63J-102X	MG RESISTOR	1kΩ 1/16W J
R329	NRSA63J-682X	MG RESISTOR	6.8kΩ 1/16W J
R330	NRSA63J-104X	MG RESISTOR	100kΩ 1/16W J
R331	NRSA63J-101X	MG RESISTOR	100Ω 1/16W J
R332	NRSA63J-101X	MG RESISTOR	100Ω 1/16W J
R333	NRSA63J-103X	MG RESISTOR	10kΩ 1/16W J
R334	NRSA63J-102X	MG RESISTOR	1kΩ 1/16W J
R336	NRSA63J-182X	MG RESISTOR	1.8kΩ 1/16W J
R337	NRSA63J-682X	MG RESISTOR	6.8kΩ 1/16W J
R338	NRSA63J-332X	MG RESISTOR	3.3kΩ 1/16W J
R339	NRSA63J-102X	MG RESISTOR	1kΩ 1/16W J
R341	NRSA63J-272X	MG RESISTOR	2.7kΩ 1/16W J
R342	NRSA63J-470X	MG RESISTOR	47Ω 1/16W J
R343	NRSA63J-330X	MG RESISTOR	33Ω 1/16W J
R344	NRSA63J-151X	MG RESISTOR	150Ω 1/16W J
R345	NRSA63J-471X	MG RESISTOR	470Ω 1/16W J
R346	NRSA63J-330X	MG RESISTOR	33Ω 1/16W J
R347	NRSA63J-151X	MG RESISTOR	150Ω 1/16W J
R348	NRSA63J-471X	MG RESISTOR	470Ω 1/16W J
R349	NRSA63J-330X	MG RESISTOR	33Ω 1/16W J
R350	NRSA63J-151X	MG RESISTOR	150Ω 1/16W J
R351	NRSA63J-471X	MG RESISTOR	470Ω 1/16W J
R352	NRSA63J-471X	MG RESISTOR	470Ω 1/16W J
R353	NRSA63J-271X	MG RESISTOR	270Ω 1/16W J
R354	NRSA63J-471X	MG RESISTOR	470Ω 1/16W J
R355	NRSA63J-471X	MG RESISTOR	470Ω 1/16W J
R357	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J
R358	NRSA63J-470X	MG RESISTOR	47Ω 1/16W J
R359	NRSA63J-103X	MG RESISTOR	10kΩ 1/16W J
R360	NRSA63J-103X	MG RESISTOR	10kΩ 1/16W J
R362	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J
R901	NRS12BJ-101W	MG RESISTOR	100Ω 1/2W J
R902	NRS12BJ-101W	MG RESISTOR	100Ω 1/2W J
R904	NRSA63J-471X	MG RESISTOR	470Ω 1/16W J
R905	NRSA63J-471X	MG RESISTOR	470Ω 1/16W J
RA001	NRZ0040-0R0X	NET RESISTOR	0Ω 1/16W J x4
RA002	NRZ0040-0R0X	NET RESISTOR	0Ω 1/16W J x4
RA003	NRZ0040-0R0X	NET RESISTOR	0Ω 1/16W J x4
RA004	NRZ0040-0R0X	NET RESISTOR	0Ω 1/16W J x4
RA005	NRZ0040-0R0X	NET RESISTOR	0Ω 1/16W J x4
RA006	NRZ0040-0R0X	NET RESISTOR	0Ω 1/16W J x4
RA007	NRZ0040-0R0X	NET RESISTOR	0Ω 1/16W J x4
RA008	NRZ0040-0R0X	NET RESISTOR	0Ω 1/16W J x4
L001	NQL092K-4R7X	COIL	4.7uH K
L003	NQL092K-4R7X	COIL	4.7uH K
L005	NQL092K-4R7X	COIL	4.7uH K
L006	NQL092K-4R7X	COIL	4.7uH K
L007	NQL092K-4R7X	COIL	4.7uH K
L008	NQL092K-4R7X	COIL	4.7uH K
L009	NQL034K-4R7X	COIL	4.7uH K
L010	NQL092K-4R7X	COIL	4.7uH K
L011	NQL092K-4R7X	COIL	4.7uH K
L012	NQL092K-4R7X	COIL	4.7uH K
L013	NQL092K-4R7X	COIL	4.7uH K
L014	NQL092K-4R7X	COIL	4.7uH K
L015	NQL034K-4R7X	COIL	4.7uH K
L016	NQL034K-4R7X	COIL	4.7uH K
L020	NQL092K-1R5X	COIL	1.5uH K
L021	NQL092K-1R5X	COIL	1.5uH K
L201	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J
L202	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J
L203	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J
L301	NQL034K-100X	COIL	10uH K
L901	NQL034K-100X	COIL	10uH K
L902	NRS181J-0R0X	MG RESISTOR	0Ω 1/8W J
L903	NQL034K-100X	COIL	10uH K
L904	NQL034K-100X	COIL	10uH K

⚠Ref No.	Part No.	Part Name	Description Local
K001	NQR0389-003X	FERRITE BEADS	
K002	NQR0389-003X	FERRITE BEADS	
K003	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J
K901	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J
K902	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J
K905	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J
K906	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J
K907	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J
K908	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J
LC001	NQR0415-003X	EMI FILTER	0.47uF 16V M
LC002	NQR0415-003X	EMI FILTER	0.47uF 16V M
X001	NAX0618-001X	CRYSTAL	
X201	NAX0548-001X	CRYSTAL	
X301	NAX0619-001X	CRYSTAL	

PRINTED WIRING BOARD PARTS LIST [HV-29JH74/G]

MAIN P.W. BOARD ASS'Y (SML-1513A-H2)

⚠Ref No.	Part No.	Part Name	Description	Local
IC101	MSP3413G-QA-B3	IC		
IC201	CXA2089Q-X	IC		
IC501	BA10324AF-XE	IC		
IC551	LA6515	IC		
IC601	BA4558F-X	IC		
IC651	AN5277	IC		
IC701	ATE32-29JH24	IC	(SERVICE)	
IC901	AN78L08-T	IC		
IC902	MM1565AF-X	IC		
Q001	2SC3928A/QR/-X	TRANSISTOR		
Q002	2SC3928A/QR/-X	TRANSISTOR		
Q101	UN2213-X	DIGI TRANSISTOR		
Q210	2SA1530A/QR/-X	TRANSISTOR		
Q211	DTC323TK-X	DIGI TRANSISTOR		
Q214	DTC323TK-X	DIGI TRANSISTOR		
Q216	2SC3928A/QR/-X	TRANSISTOR		
Q217	2SC1740S/QR/-T	TRANSISTOR		
Q305	KTC3199/YG/-T	TRANSISTOR		
Q501	2SC3928A/QR/-X	TRANSISTOR		
Q502	2SC3928A/QR/-X	TRANSISTOR		
Q621	2SA1530A/QR/-X	TRANSISTOR		
Q623	DTC323TK-X	DIGI TRANSISTOR		
Q624	DTC323TK-X	DIGI TRANSISTOR		
Q628	UN2213-X	DIGI TRANSISTOR		
Q629	2SC3928A/QR/-X	TRANSISTOR		
Q632	2SA1530A/QR/-X	TRANSISTOR		
Q701	2SA1530A/QR/-X	TRANSISTOR		
Q702	2SC3928A/QR/-X	TRANSISTOR		
D201	MA3120/M/-X	Z DIODE		
D202	MA3120/M/-X	Z DIODE		
D203	MA3120/M/-X	Z DIODE		
D204	MA3120/M/-X	Z DIODE		
D205	MA3120/M/-X	Z DIODE		
D206	MA3120/M/-X	Z DIODE		
D207	MA3120/M/-X	Z DIODE		
D208	MA3120/M/-X	Z DIODE		
D215	MA3120/M/-X	Z DIODE		
D216	MA3120/M/-X	Z DIODE		
D217	MA3120/M/-X	Z DIODE		
D218	MA3120/M/-X	Z DIODE		
D219	MA3120/M/-X	Z DIODE		
D220	MA3120/M/-X	Z DIODE		
D501	MA111-X	SI DIODE		
D502	MA111-X	SI DIODE		
D503	MA111-X	SI DIODE		
D504	MA111-X	SI DIODE		
D623	MA111-X	SI DIODE		
D626	MA111-X	SI DIODE		
D629	MA111-X	SI DIODE		
D630	MA111-X	SI DIODE		
D631	MA111-X	SI DIODE		
D633	MA111-X	SI DIODE		
D651	MA3330/L/-X	Z DIODE		
D653	MA3330/L/-X	Z DIODE		
D701	MA3056/M/-X	Z DIODE		
D702	MA3056/M/-X	Z DIODE		
D703	MA3056/M/-X	Z DIODE		
D704	MA3056/M/-X	Z DIODE		
D705	MA111-X	SI DIODE		
D981	MA111-X	SI DIODE		
D982	MA111-X	SI DIODE		
C001	NCB31HK-222X	C CAPACITOR	2200pF 50V K	
C002	QETN1HM-106Z	E CAPACITOR	10uF 50V M	
C004	NCB31CK-104X	C CAPACITOR	0.1uF 16V K	
C005	QETN1CM-108Z	E CAPACITOR	1000uF 16V M	
C006	NCB31HK-103X	C CAPACITOR	0.01uF 50V K	
C007	QETN1HM-106Z	E CAPACITOR	10uF 50V M	
C010	NCF31AZ-105X	C CAPACITOR	1uF 10V Z	
C011	QETN1HM-106Z	E CAPACITOR	10uF 50V M	
C012	NCB31HK-103X	C CAPACITOR	0.01uF 50V K	
C013	NCB31HK-472X	C CAPACITOR	4700pF 50V K	
C014	NCB31CK-104X	C CAPACITOR	0.1uF 16V K	
C015	QETN1HM-106Z	E CAPACITOR	10uF 50V M	
C016	NCB31HK-472X	C CAPACITOR	4700pF 50V K	
C017	NCB31CK-104X	C CAPACITOR	0.1uF 16V K	
C101	NCB31CK-104X	C CAPACITOR	0.1uF 16V K	
C102	QETN1HM-106Z	E CAPACITOR	10uF 50V M	
C103	NCB31CK-104X	C CAPACITOR	0.1uF 16V K	

⚠Ref No.	Part No.	Part Name	Description	Local
C104	QETN1CM-107Z	E CAPACITOR	100uF 16V M	
C105	QETN1HM-106Z	E CAPACITOR	10uF 50V M	
C106	NCB31CK-104X	C CAPACITOR	0.1uF 16V K	
C117	NCB31HK-103X	C CAPACITOR	0.01uF 50V K	
C118	NCB31HK-103X	C CAPACITOR	0.01uF 50V K	
C119	NDC31HJ-2R0X	C CAPACITOR	2pF 50V J	
C120	NDC31HJ-2R0X	C CAPACITOR	2pF 50V J	
C121	NCB31HK-103X	C CAPACITOR	0.01uF 50V K	
C122	NDC31HJ-102X	C CAPACITOR	1000pF 50V J	
C123	NDC31HJ-102X	C CAPACITOR	1000pF 50V J	
C124	QETN1HM-106Z	E CAPACITOR	10uF 50V M	
C125	QETN1HM-106Z	E CAPACITOR	10uF 50V M	
C126	NCB31CK-104X	C CAPACITOR	0.1uF 16V K	
C127	QETN1HM-106Z	E CAPACITOR	10uF 50V M	
C128	NCB31CK-104X	C CAPACITOR	0.1uF 16V K	
C130	NDC31HJ-102X	C CAPACITOR	1000pF 50V J	
C131	NDC31HJ-102X	C CAPACITOR	1000pF 50V J	
C201	QETN1HM-106Z	E CAPACITOR	10uF 50V M	
C202	QETN1HM-106Z	E CAPACITOR	10uF 50V M	
C204	NCF31AZ-105X	C CAPACITOR	1uF 10V Z	
C205	NCF31AZ-105X	C CAPACITOR	1uF 10V Z	
C206	QETN1HM-106Z	E CAPACITOR	10uF 50V M	
C207	NCF31AZ-105X	C CAPACITOR	1uF 10V Z	
C209	NCF31AZ-105X	C CAPACITOR	1uF 10V Z	
C210	NCB31HK-103X	C CAPACITOR	0.01uF 50V K	
C213	NCF31AZ-105X	C CAPACITOR	1uF 10V Z	
C215	QETN1HM-106Z	E CAPACITOR	10uF 50V M	
C216	NCF31AZ-105X	C CAPACITOR	1uF 10V Z	
C219	NCF31AZ-105X	C CAPACITOR	1uF 10V Z	
C220	NCF31AZ-105X	C CAPACITOR	1uF 10V Z	
C222	QETN1HM-106Z	E CAPACITOR	10uF 50V M	
C223	NCF31AZ-105X	C CAPACITOR	1uF 10V Z	
C224	NCF31AZ-105X	C CAPACITOR	1uF 10V Z	
C225	NCB31HK-103X	C CAPACITOR	0.01uF 50V K	
C226	QETN1HM-106Z	E CAPACITOR	10uF 50V M	
C227	QETN1HM-106Z	E CAPACITOR	10uF 50V M	
C228	NCB31HK-103X	C CAPACITOR	0.01uF 50V K	
C229	QETN1HM-106Z	E CAPACITOR	10uF 50V M	
C230	QENC1EM-106Z	BP E CAPACITOR	10uF 25V M	
C231	QENC1EM-106Z	BP E CAPACITOR	10uF 25V M	
C234	NCB31HK-103X	C CAPACITOR	0.01uF 50V K	
C235	QETN1CM-107Z	E CAPACITOR	100uF 16V M	
C236	QETN1CM-477Z	E CAPACITOR	470uF 16V M	
C237	NCF31AZ-105X	C CAPACITOR	1uF 10V Z	
C238	NCF31AZ-105X	C CAPACITOR	1uF 10V Z	
C245	QETN1HM-106Z	E CAPACITOR	10uF 50V M	
C246	NCB31HK-103X	C CAPACITOR	0.01uF 50V K	
C247	NCB31HK-103X	C CAPACITOR	0.01uF 50V K	
C303	QETN1CM-227Z	E CAPACITOR	220uF 16V M	
C304	NCB31HK-103X	C CAPACITOR	0.01uF 50V K	
C308	NCB31CK-224X	C CAPACITOR	0.22uF 16V K	
C309	NCB31HK-102X	C CAPACITOR	1000pF 50V K	
C310	NCB31CK-224X	C CAPACITOR	0.22uF 16V K	
C503	NDC31HJ-102X	C CAPACITOR	1000pF 50V J	
C504	NCB31CK-104X	C CAPACITOR	0.1uF 16V K	
C505	NCB31CK-104X	C CAPACITOR	0.1uF 16V K	
C506	NCB31CK-104X	C CAPACITOR	0.1uF 16V K	
C507	NCB31CK-104X	C CAPACITOR	0.1uF 16V K	
C508	QETN1CM-107Z	E CAPACITOR	100uF 16V M	
C509	NCB31CK-104X	C CAPACITOR	0.1uF 16V K	
C510	NCB31EK-333X	C CAPACITOR	0.033uF 25V K	
C515	NCB31HK-103X	C CAPACITOR	0.01uF 50V K	
C551	NCF31CZ-224X	C CAPACITOR	0.22uF 16V Z	
C552	NCF31CZ-224X	C CAPACITOR	0.22uF 16V Z	
C553	QETN1EM-476Z	E CAPACITOR	47uF 25V M	
C554	NCF31CZ-224X	C CAPACITOR	0.22uF 16V Z	
C555	NCF31CZ-224X	C CAPACITOR	0.22uF 16V Z	
C561	NDC31HJ-390X	C CAPACITOR	39pF 50V J	
C601	QENC1HM-105Z	BP E CAPACITOR	1uF 50V M	
C602	QENC1HM-105Z	BP E CAPACITOR	1uF 50V M	
C603	QETN1CM-107Z	E CAPACITOR	100uF 16V M	
C604	NCB31HK-153X	C CAPACITOR	0.015uF 50V K	
C605	NCB31HK-122X	C CAPACITOR	1200pF 50V K	
C606	NCB31HK-153X	C CAPACITOR	0.015uF 50V K	
C607	NCB31HK-122X	C CAPACITOR	1200pF 50V K	
C608	NCB31HK-223X	C CAPACITOR	0.022uF 50V K	
C609	NCB31HK-223X	C CAPACITOR	0.022uF 50V K	
C610	QENC1CM-106Z	BP E CAPACITOR	10uF 16V M	
C611	QENC1CM-106Z	BP E CAPACITOR	10uF 16V M	
C623	QETN1EM-108Z	E CAPACITOR	1000uF 25V M	
C624	QETN1HM-336Z	E CAPACITOR	33uF 50V M	
C650	QETN1CM-107Z	E CAPACITOR	100uF 16V M	
C651	QETN1HM-106Z	E CAPACITOR	10uF 50V M	
C652	QETN1HM-106Z	E CAPACITOR	10uF 50V M	

⚠Ref No.	Part No.	Part Name	Description Local
C654	QETN1HM-107Z	E CAPACITOR	100uF 50V M
C655	NCF21HZ-224X	C CAPACITOR	0.22uF 50V Z
C656	NCF21HZ-224X	C CAPACITOR	0.22uF 50V Z
C657	QETM1VM-228	E CAPACITOR	2200uF 35V M
C660	NCF21HZ-224X	C CAPACITOR	0.22uF 50V Z
C661	NCF21HZ-224X	C CAPACITOR	0.22uF 50V Z
C666	QETN1HM-106Z	E CAPACITOR	10uF 50V M
C691	NCB31HK-102X	C CAPACITOR	1000pF 50V K
C701	NCB31HK-104X	C CAPACITOR	0.1uF 50V K
C702	NCB31CK-104X	C CAPACITOR	0.1uF 16V K
C711	NCB31CK-104X	C CAPACITOR	0.1uF 16V K
C901	QETN1CM-107Z	E CAPACITOR	100uF 16V M
C902	NCB31CK-104X	C CAPACITOR	0.1uF 16V K
C903	QETN1CM-107Z	E CAPACITOR	100uF 16V M
C904	NCF31AZ-105X	C CAPACITOR	1uF 10V Z
C905	QETN1HM-106Z	E CAPACITOR	10uF 50V M
C906	NCB20JK-225X	C CAPACITOR	2.2uF 6.3V K
C907	NDC31HJ-471X	C CAPACITOR	470pF 50V J
C908	QETN1CM-227Z	E CAPACITOR	220uF 16V M
R002	NRSA63J-101X	MG RESISTOR	100Ω 1/16W J
R003	NRSA63J-101X	MG RESISTOR	100Ω 1/16W J
R004	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J
R005	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J
R006	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J
R007	NRSA63J-222X	MG RESISTOR	2.2kΩ 1/16W J
R008	NRSA63J-102X	MG RESISTOR	1kΩ 1/16W J
R009	NRSA63J-331X	MG RESISTOR	330Ω 1/16W J
R010	NRSA63J-270X	MG RESISTOR	27Ω 1/16W J
R011	NRSA63J-102X	MG RESISTOR	1kΩ 1/16W J
R012	NRSA63J-271X	MG RESISTOR	270Ω 1/16W J
R101	NRSA63J-101X	MG RESISTOR	100Ω 1/16W J
R102	NRSA63J-101X	MG RESISTOR	100Ω 1/16W J
R105	NRSA63J-103X	MG RESISTOR	10kΩ 1/16W J
R106	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J
R107	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J
R108	NRSA63J-101X	MG RESISTOR	100Ω 1/16W J
R109	NRSA63J-101X	MG RESISTOR	100Ω 1/16W J
R205	NRSA63J-750X	MG RESISTOR	75Ω 1/16W J
R206	NRSA63J-750X	MG RESISTOR	75Ω 1/16W J
R207	NRSA63J-750X	MG RESISTOR	75Ω 1/16W J
R208	NRSA63J-222X	MG RESISTOR	2.2kΩ 1/16W J
R209	NRSA63J-222X	MG RESISTOR	2.2kΩ 1/16W J
R210	NRSA63J-333X	MG RESISTOR	33kΩ 1/16W J
R211	NRSA63J-333X	MG RESISTOR	33kΩ 1/16W J
R212	NRSA63J-101X	MG RESISTOR	100Ω 1/16W J
R213	NRSA63J-101X	MG RESISTOR	100Ω 1/16W J
R215	NRSA63J-222X	MG RESISTOR	2.2kΩ 1/16W J
R216	NRSA63J-333X	MG RESISTOR	33kΩ 1/16W J
R217	NRSA63J-222X	MG RESISTOR	2.2kΩ 1/16W J
R218	NRSA63J-333X	MG RESISTOR	33kΩ 1/16W J
R234	NRSA63J-222X	MG RESISTOR	2.2kΩ 1/16W J
R235	NRSA63J-333X	MG RESISTOR	33kΩ 1/16W J
R236	NRSA63J-222X	MG RESISTOR	2.2kΩ 1/16W J
R237	NRSA63J-333X	MG RESISTOR	33kΩ 1/16W J
R238	NRSA63J-101X	MG RESISTOR	100Ω 1/16W J
R239	NRSA63J-101X	MG RESISTOR	100Ω 1/16W J
R240	NRSA63J-101X	MG RESISTOR	100Ω 1/16W J
R243	NRSA63J-101X	MG RESISTOR	100Ω 1/16W J
R244	NRSA63J-101X	MG RESISTOR	100Ω 1/16W J
R245	NRSA63J-101X	MG RESISTOR	100Ω 1/16W J
R246	NRSA63J-101X	MG RESISTOR	100Ω 1/16W J
R247	NRSA63J-101X	MG RESISTOR	100Ω 1/16W J
R258	NRSA63J-823X	MG RESISTOR	82kΩ 1/16W J
R259	NRSA63J-823X	MG RESISTOR	82kΩ 1/16W J
R260	NRSA63J-104X	MG RESISTOR	100kΩ 1/16W J
R264	NRSA63J-101X	MG RESISTOR	100Ω 1/16W J
R265	NRSA63J-101X	MG RESISTOR	100Ω 1/16W J
R266	NRSA63J-101X	MG RESISTOR	100Ω 1/16W J
R267	NRSA63J-101X	MG RESISTOR	100Ω 1/16W J
R268	NRSA63J-101X	MG RESISTOR	100Ω 1/16W J
R269	NRSA63J-101X	MG RESISTOR	100Ω 1/16W J
R270	NRSA63J-101X	MG RESISTOR	100Ω 1/16W J
R271	NRSA63J-333X	MG RESISTOR	33kΩ 1/16W J
R272	NRSA63J-333X	MG RESISTOR	33kΩ 1/16W J
R273	NRSA63J-222X	MG RESISTOR	2.2kΩ 1/16W J
R274	NRSA63J-222X	MG RESISTOR	2.2kΩ 1/16W J
R275	NRSA63J-391X	MG RESISTOR	390Ω 1/16W J
R276	NRSA63J-391X	MG RESISTOR	390Ω 1/16W J
R277	NRSA63J-101X	MG RESISTOR	100Ω 1/16W J
R278	NRSA63J-222X	MG RESISTOR	2.2kΩ 1/16W J
R279	NRSA63J-562X	MG RESISTOR	5.6kΩ 1/16W J
R280	NRSA63J-562X	MG RESISTOR	5.6kΩ 1/16W J
R281	NRSA63J-102X	MG RESISTOR	1kΩ 1/16W J
R282	NRSA63J-102X	MG RESISTOR	1kΩ 1/16W J
R286	NRSA63J-101X	MG RESISTOR	100Ω 1/16W J
R287	QRK126J-151X	UNF C RESISTOR	150Ω 1/2W J
R288	NRSA63J-750X	MG RESISTOR	75Ω 1/16W J
R289	NRSA63J-101X	MG RESISTOR	100Ω 1/16W J
R290	NRSA63J-101X	MG RESISTOR	100Ω 1/16W J
R295	NRSA63J-333X	MG RESISTOR	33kΩ 1/16W J
R296	NRSA63J-101X	MG RESISTOR	100Ω 1/16W J
R311	QRK126J-391X	UNF C RESISTOR	390Ω 1/2W J
R312	NRSA63J-680X	MG RESISTOR	68Ω 1/16W J
R313	QRK126J-391X	UNF C RESISTOR	390Ω 1/2W J
R314	NRSA63J-223X	MG RESISTOR	22kΩ 1/16W J
R315	NRSA63J-680X	MG RESISTOR	68Ω 1/16W J
R501	NRSA63J-123X	MG RESISTOR	12kΩ 1/16W J
R502	NRSA63J-123X	MG RESISTOR	12kΩ 1/16W J
R503	NRSA63J-123X	MG RESISTOR	12kΩ 1/16W J
R504	NRSA63J-123X	MG RESISTOR	12kΩ 1/16W J
R505	NRSA63J-124X	MG RESISTOR	120kΩ 1/16W J
R506	NRSA63J-472X	MG RESISTOR	4.7kΩ 1/16W J
R507	NRSA63J-273X	MG RESISTOR	27kΩ 1/16W J
R509	NRSA63J-123X	MG RESISTOR	12kΩ 1/16W J
R510	NRSA63J-563X	MG RESISTOR	56kΩ 1/16W J
R511	NRSA63J-682X	MG RESISTOR	6.8kΩ 1/16W J
R512	NRSA63J-153X	MG RESISTOR	15kΩ 1/16W J
R513	NRSA63J-332X	MG RESISTOR	3.3kΩ 1/16W J
R514	NRSA63J-392X	MG RESISTOR	3.9kΩ 1/16W J
R515	NRSA63J-333X	MG RESISTOR	33kΩ 1/16W J
R516	NRSA63J-123X	MG RESISTOR	12kΩ 1/16W J
R517	NRSA63J-123X	MG RESISTOR	12kΩ 1/16W J
R518	NRSA63J-123X	MG RESISTOR	12kΩ 1/16W J
R519	NRSA63J-472X	MG RESISTOR	4.7kΩ 1/16W J
R520	NRSA63J-333X	MG RESISTOR	33kΩ 1/16W J
R521	NRSA63J-473X	MG RESISTOR	47kΩ 1/16W J
R523	NRSA63J-224X	MG RESISTOR	220kΩ 1/16W J
R524	NRSA63J-224X	MG RESISTOR	220kΩ 1/16W J
R525	NRSA63J-223X	MG RESISTOR	22kΩ 1/16W J
R526	NRSA63J-683X	MG RESISTOR	68kΩ 1/16W J
R527	NRSA63J-563X	MG RESISTOR	56kΩ 1/16W J
R528	NRSA63J-472X	MG RESISTOR	4.7kΩ 1/16W J
R529	NRSA63J-473X	MG RESISTOR	47kΩ 1/16W J
R530	NRSA63J-154X	MG RESISTOR	150kΩ 1/16W J
R531	NRSA63J-472X	MG RESISTOR	4.7kΩ 1/16W J
R532	NRSA63J-123X	MG RESISTOR	12kΩ 1/16W J
R533	NRSA63J-272X	MG RESISTOR	2.7kΩ 1/16W J
R536	NRSA63J-154X	MG RESISTOR	150kΩ 1/16W J
R537	NRSA63J-123X	MG RESISTOR	12kΩ 1/16W J
R551	NRSA63J-124X	MG RESISTOR	120kΩ 1/16W J
R552	NRSA63J-100X	MG RESISTOR	10Ω 1/16W J
R553	NRSA63J-683X	MG RESISTOR	68kΩ 1/16W J
R554	NRSA63J-562X	MG RESISTOR	5.6kΩ 1/16W J
R555	NRSA63J-154X	MG RESISTOR	150kΩ 1/16W J
R556	NRSA63J-104X	MG RESISTOR	100kΩ 1/16W J
R557	NRSA63J-100X	MG RESISTOR	10Ω 1/16W J
R558	NRSA63J-562X	MG RESISTOR	5.6kΩ 1/16W J
R559	NRSA63J-333X	MG RESISTOR	33kΩ 1/16W J
R560	NRSA63J-472X	MG RESISTOR	4.7kΩ 1/16W J
R601	NRSA63J-333X	MG RESISTOR	33kΩ 1/16W J
R602	NRSA63J-333X	MG RESISTOR	33kΩ 1/16W J
R603	NRSA63J-103X	MG RESISTOR	10kΩ 1/16W J
R604	NRSA63J-332X	MG RESISTOR	3.3kΩ 1/16W J
R605	NRSA63J-102X	MG RESISTOR	1kΩ 1/16W J
R606	NRSA63J-102X	MG RESISTOR	1kΩ 1/16W J
R607	NRSA63J-332X	MG RESISTOR	3.3kΩ 1/16W J
R608	NRSA63J-332X	MG RESISTOR	3.3kΩ 1/16W J
R609	NRSA63J-332X	MG RESISTOR	3.3kΩ 1/16W J
R610	NRSA63J-222X	MG RESISTOR	2.2kΩ 1/16W J
R611	NRSA63J-222X	MG RESISTOR	2.2kΩ 1/16W J
R612	NRSA63J-221X	MG RESISTOR	220Ω 1/16W J
R613	NRSA63J-221X	MG RESISTOR	220Ω 1/16W J
R621	NRSA63J-104X	MG RESISTOR	100kΩ 1/16W J
R623	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J
R624	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J
R629	NRSA63J-103X	MG RESISTOR	10kΩ 1/16W J
R631	NRSA63J-473X	MG RESISTOR	47kΩ 1/16W J
R632	NRSA63J-822X	MG RESISTOR	8.2kΩ 1/16W J
R635	NRSA63J-822X	MG RESISTOR	8.2kΩ 1/16W J
R637	NRSA63J-473X	MG RESISTOR	47kΩ 1/16W J
R638	NRSA63J-273X	MG RESISTOR	27kΩ 1/16W J
R650	NRSA63J-103X	MG RESISTOR	10kΩ 1/16W J
R651	NRSA63J-472X	MG RESISTOR	4.7kΩ 1/16W J
R652	NRSA63J-472X	MG RESISTOR	4.7kΩ 1/16W J
R653	NRSA63J-104X	MG RESISTOR	100kΩ 1/16W J
R654	NRSA63J-104X	MG RESISTOR	100kΩ 1/16W J
R655	NRSA63J-103X	MG RESISTOR	10kΩ 1/16W J
R657	NRSA63J-103X	MG RESISTOR	10kΩ 1/16W J
R658	QRE121J-8R2Y	C RESISTOR	8.2Ω 1/2W J
R660	QRE121J-8R2Y	C RESISTOR	8.2Ω 1/2W J
R661	NRSA63J-183X	MG RESISTOR	18kΩ 1/16W J
R673	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J
R702	NRSA63J-221X	MG RESISTOR	220Ω 1/16W J

⚠Ref No.	Part No.	Part Name	Description	Local
R703	NRSA63J-221X	MG RESISTOR	220Ω 1/16W J	
R704	NRSA63J-221X	MG RESISTOR	220Ω 1/16W J	
R705	NRSA63J-221X	MG RESISTOR	220Ω 1/16W J	
R706	NRSA63J-101X	MG RESISTOR	100Ω 1/16W J	
R707	NRSA63J-101X	MG RESISTOR	100Ω 1/16W J	
R708	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J	
R709	NRSA63J-222X	MG RESISTOR	2.2kΩ 1/16W J	
R710	NRSA63J-104X	MG RESISTOR	100kΩ 1/16W J	
R713	QRT039J-3R3	MF RESISTOR	3.3Ω 3W J	
L001	QQL244K-270Z	PEAKING COIL	27uH K	
L002	QQL244K-100Z	PEAKING COIL	10uH K	
L003	QQL244K-100Z	PEAKING COIL	10uH K	
L101	QRN143J-0R0X	C RESISTOR	0Ω 1/4W J	
L102	QQL244K-4R7Z	PEAKING COIL	4.7uH K	
CN001	QGB1505J1-35	CONNECTOR	B-B (1-35)	
CN003	QGB1506L1-16	CONNECTOR	B-B (1-16)	
CN004	QGB1506L1-16	CONNECTOR	B-B (1-16)	
CN005	QGB1506L1-16	CONNECTOR	B-B (1-16)	
CN00A	QJB003-031813	SIN ID C-B WIRE		
CN00B	QGF1220C2-19	CONNECTOR	FFC/FPC (1-19)	
HS651	LC32265-001A	HEAT SINK/AL-F/		
K001	NQR0389-003X	FERRITE BEADS		
K002	NQR0389-003X	FERRITE BEADS		
K101	NQR0389-003X	FERRITE BEADS		
K102	NQR0389-003X	FERRITE BEADS		
K551	QQR0621-002Z	FERRITE BEADS		
K552	QQR0621-002Z	FERRITE BEADS		
LC001	QQR1199-001	EMI FILTER		
LC002	QQR1199-001	EMI FILTER		
LC003	QQR1199-001	EMI FILTER		
LC004	QQR1199-001	EMI FILTER		
LC005	QQR1199-001	EMI FILTER		
LC101	NQR0431-001X	EMI FILTER	0.22uF 50V Z	
⚠TU001	QAU0197-002	TUNER		
X101	CE42546-001Z	CRYSTAL		

POWER & DEF P.W. BOARD ASS'Y (SML-2505A-H2)

REFER TO PARTS LIST IN PAGE 3-8 FOR THIS P.W. BOARD.

CRT SOKET P.W. BOARD ASS'Y (SML-3503A-H2)

REFER TO PARTS LIST IN PAGE 3-9 FOR THIS P.W. BOARD.

FRONT CONTROL P.W. BOARD ASS'Y (SML-8502A-H2)

REFER TO PARTS LIST IN PAGE 3-10 FOR THIS P.W. BOARD.

AV JACK P.W. BOARD ASS'Y (SML0J506A-H2)

⚠Ref No.	Part No.	Part Name	Description	Local
Q002	2SC2412K/QR/-X	TRANSISTOR		
Q003	2SC2412K/QR/-X	TRANSISTOR		
Q006	2SC2412K/QR/-X	TRANSISTOR		
D001	MA8120/M/-X	Z DIODE		
D002	MA8120/M/-X	Z DIODE		
D003	MA8120/M/-X	Z DIODE		
C001	NCB31HK-152X	C CAPACITOR	1500pF 50V K	
C002	NCB31HK-152X	C CAPACITOR	1500pF 50V K	
C008	NCB31HK-152X	C CAPACITOR	1500pF 50V K	
C009	NCB31HK-152X	C CAPACITOR	1500pF 50V K	
C010	QETN1HM-106Z	E CAPACITOR	10uF 50V M	
C011	NCB31HK-152X	C CAPACITOR	1500pF 50V K	
C012	NCB31HK-152X	C CAPACITOR	1500pF 50V K	
C014	NCB31HK-472X	C CAPACITOR	4700pF 50V K	
C015	NCB31HK-472X	C CAPACITOR	4700pF 50V K	
C016	QETN1HM-106Z	E CAPACITOR	10uF 50V M	
C017	QETN1HM-106Z	E CAPACITOR	10uF 50V M	
C018	QETN1HM-106Z	E CAPACITOR	10uF 50V M	

⚠Ref No.	Part No.	Part Name	Description	Local
R001	NRSA63J-750X	MG RESISTOR	75Ω 1/16W J	
R002	NRSA63J-333X	MG RESISTOR	33kΩ 1/16W J	
R003	NRSA63J-750X	MG RESISTOR	75Ω 1/16W J	
R004	NRSA63J-750X	MG RESISTOR	75Ω 1/16W J	
R014	NRSA63J-750X	MG RESISTOR	75Ω 1/16W J	
R015	NRSA63J-223X	MG RESISTOR	22kΩ 1/16W J	
R016	NRSA63J-750X	MG RESISTOR	75Ω 1/16W J	
R017	NRSA63J-223X	MG RESISTOR	22kΩ 1/16W J	
R018	NRSA63J-750X	MG RESISTOR	75Ω 1/16W J	
R019	NRSA63J-750X	MG RESISTOR	75Ω 1/16W J	
R022	NRSA63J-471X	MG RESISTOR	470Ω 1/16W J	
R023	NRSA63J-223X	MG RESISTOR	22kΩ 1/16W J	
R024	NRSA63J-153X	MG RESISTOR	15kΩ 1/16W J	
R025	NRSA63J-222X	MG RESISTOR	2.2kΩ 1/16W J	
R032	NRSA63J-223X	MG RESISTOR	22kΩ 1/16W J	
R033	NRSA63J-153X	MG RESISTOR	15kΩ 1/16W J	
R034	NRSA63J-222X	MG RESISTOR	2.2kΩ 1/16W J	
CN001	QGB1505K1-35	CONNECTOR	B-B (1-35)	
J001	QNZ0454-001	AV JACK	VIDEO1	
J002	QNN0349-001	PIN JACK	VIDEO2	
J003	QNN0349-002	PIN JACK	VIDEO3/COMP	
J004	QNN0348-001	PIN JACK	VIDEO3/COMP	
J005	QNN0349-001	PIN JACK	LINE OUT	

MICON/100HZ P.W. BOARD ASS'Y (SML0Z503A-H2)

⚠Ref No.	Part No.	Part Name	Description	Local
IC001	SDA6000-B12	IC		
IC002	S-80828CNNB-W	IC		
IC003	K4S641632H-TC75	IC(DIGITAL)		
IC004	MBV160-29JH24	IC(MICRO C ROM)	(SERVICE)	
IC191	PQ2L3252MS-X	IC		
IC201	VSP9407B-VK-B11	IC		
IC301	DDP3315C-QA-G3	IC		
IC901	R1170H181B-X	IC		
IC902	MM1563DF-X	IC		
IC903	MM1565AF-X	IC		
Q013	2SK1830-X	MOS FET		
Q014	2SK1830-X	MOS FET		
Q201	2SA1530A/QR/-X	TRANSISTOR		
Q202	2SA1530A/QR/-X	TRANSISTOR		
Q203	2SA1530A/QR/-X	TRANSISTOR		
Q301	2SA1530A/QR/-X	TRANSISTOR		
Q302	2SC3928A/QR/-X	TRANSISTOR		
Q304	2SC4672/PQ/-W	POW TRANSISTOR		
Q305	2SA1530A/QR/-X	TRANSISTOR		
Q306	2SA1530A/QR/-X	TRANSISTOR		
Q307	2SA1530A/QR/-X	TRANSISTOR		
QA004	UMT1N-W	PAIR TRANSISTOR		
QA301	UMX1N-W	PAIR TRANSISTOR		
QA302	UMT1N-W	PAIR TRANSISTOR		
D001	MA111-X	SI DIODE		
D005	RSA6.1J4-W	SI DIODE		
D006	MA3039/H/-X	Z DIODE		
D007	MA3039/H/-X	Z DIODE		
D301	DA221-X	DIODE ARRAY		
D302	DA221-X	DIODE ARRAY		
D303	DA221-X	DIODE ARRAY		
D304	DA221-X	DIODE ARRAY		
D305	MA111-X	SI DIODE		
D306	DA221-X	DIODE ARRAY		
D307	MA3039/H/-X	Z DIODE		
D308	MA3033-X	CHIP ZENER DIODE		
C001	NCB31HK-104X	C CAPACITOR	0.1uF 50V K	
C019	NEH71CM-476X	E CAPACITOR	47uF 16V M	
C020	NCB31HK-104X	C CAPACITOR	0.1uF 50V K	
C023	NCB31EK-333X	C CAPACITOR	0.033uF 25V K	
C024	NCB31HK-104X	C CAPACITOR	0.1uF 50V K	
C025	NCB31EK-333X	C CAPACITOR	0.033uF 25V K	
C027	NEH71CM-476X	E CAPACITOR	47uF 16V M	
C028	NEH70GM-227X	E CAPACITOR	220uF 4V M	
C029	NDC31HJ-151X	C CAPACITOR	150pF 50V J	
C030	NCB31HK-104X	C CAPACITOR	0.1uF 50V K	
C031	NCB31HK-104X	C CAPACITOR	0.1uF 50V K	
C032	NCB31HK-104X	C CAPACITOR	0.1uF 50V K	
C034	NCB31HK-104X	C CAPACITOR	0.1uF 50V K	
C035	NCB31HK-104X	C CAPACITOR	0.1uF 50V K	
C036	NCB31HK-104X	C CAPACITOR	0.1uF 50V K	

⚠Ref No.	Part No.	Part Name	Description Local
C037	NCB31HK-104X	C CAPACITOR	0.1uF 50V K
C038	NCB31HK-104X	C CAPACITOR	0.1uF 50V K
C039	NCB31HK-104X	C CAPACITOR	0.1uF 50V K
C040	NDC31HJ-330X	C CAPACITOR	33pF 50V J
C041	NDC31HJ-330X	C CAPACITOR	33pF 50V J
C042	NCB31HK-104X	C CAPACITOR	0.1uF 50V K
C043	NCB31HK-104X	C CAPACITOR	0.1uF 50V K
C045	NCB31HK-104X	C CAPACITOR	0.1uF 50V K
C046	NCB31HK-104X	C CAPACITOR	0.1uF 50V K
C047	NCB31HK-104X	C CAPACITOR	0.1uF 50V K
C048	NEH71CM-476X	E CAPACITOR	47uF 16V M
C049	NCB31HK-104X	C CAPACITOR	0.1uF 50V K
C050	NCB31HK-104X	C CAPACITOR	0.1uF 50V K
C051	NEH71CM-476X	E CAPACITOR	47uF 16V M
C052	NCB31HK-104X	C CAPACITOR	0.1uF 50V K
C053	NCB31HK-104X	C CAPACITOR	0.1uF 50V K
C054	NCB31HK-104X	C CAPACITOR	0.1uF 50V K
C055	NCB31HK-104X	C CAPACITOR	0.1uF 50V K
C056	NCB31HK-104X	C CAPACITOR	0.1uF 50V K
C057	NCB31HK-104X	C CAPACITOR	0.1uF 50V K
C058	NCB31HK-104X	C CAPACITOR	0.1uF 50V K
C059	NEH71CM-106X	E CAPACITOR	10uF 16V M
C060	NEH71CM-106X	E CAPACITOR	10uF 16V M
C061	NEH71CM-106X	E CAPACITOR	10uF 16V M
C062	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J
C066	NCB31HK-104X	C CAPACITOR	0.1uF 50V K
C067	NCB31HK-104X	C CAPACITOR	0.1uF 50V K
C068	NCB31HK-104X	C CAPACITOR	0.1uF 50V K
C191	NEH70GM-227X	E CAPACITOR	220uF 4V M
C192	NCB20JK-225X	C CAPACITOR	2.2uF 6.3V K
C193	NCB20JK-225X	C CAPACITOR	2.2uF 6.3V K
C194	NCB31CK-104X	C CAPACITOR	0.1uF 16V K
C195	NEH70JM-107X	E CAPACITOR	100uF 6.3V M
C196	NCB20JK-225X	C CAPACITOR	2.2uF 6.3V K
C197	NEH70GM-227X	E CAPACITOR	220uF 4V M
C204	NCB31HK-104X	C CAPACITOR	0.1uF 50V K
C205	NCB31HK-473X	C CAPACITOR	0.047uF 50V K
C206	NCB31HK-104X	C CAPACITOR	0.1uF 50V K
C207	NCB31HK-473X	C CAPACITOR	0.047uF 50V K
C208	NCF31AZ-105X	C CAPACITOR	1uF 10V Z
C209	NCB31HK-473X	C CAPACITOR	0.047uF 50V K
C210	NCF31AZ-105X	C CAPACITOR	1uF 10V Z
C211	NCB31HK-104X	C CAPACITOR	0.1uF 50V K
C212	NCB31HK-473X	C CAPACITOR	0.047uF 50V K
C213	NCF31AZ-105X	C CAPACITOR	1uF 10V Z
C214	NCB31AK-334X	C CAPACITOR	0.33uF 10V K
C215	NCB31HK-104X	C CAPACITOR	0.1uF 50V K
C219	NCB31HK-103X	C CAPACITOR	0.01uF 50V K
C220	NCF31AZ-105X	C CAPACITOR	1uF 10V Z
C221	NCF31AZ-105X	C CAPACITOR	1uF 10V Z
C222	NCF31AZ-105X	C CAPACITOR	1uF 10V Z
C223	NCF31AZ-105X	C CAPACITOR	1uF 10V Z
C224	NCF31AZ-105X	C CAPACITOR	1uF 10V Z
C225	NDC31HJ-390X	C CAPACITOR	39pF 50V J
C226	NDC31HJ-390X	C CAPACITOR	39pF 50V J
C227	NCF31AZ-105X	C CAPACITOR	1uF 10V Z
C228	NCF31AZ-105X	C CAPACITOR	1uF 10V Z
C229	NCF31AZ-105X	C CAPACITOR	1uF 10V Z
C230	NCF31AZ-105X	C CAPACITOR	1uF 10V Z
C231	NCF31AZ-105X	C CAPACITOR	1uF 10V Z
C301	NEH71CM-226X	E CAPACITOR	22uF 16V M
C303	NDC31HJ-180X	C CAPACITOR	18pF 50V J
C304	NDC31HJ-180X	C CAPACITOR	18pF 50V J
C305	NEH71HM-105X	E CAPACITOR	1uF 50V M
C306	NCF31AZ-105X	C CAPACITOR	1uF 10V Z
C307	NDC31HJ-561X	C CAPACITOR	560pF 50V J
C308	NEH71HM-105X	E CAPACITOR	1uF 50V M
C309	NCF31AZ-105X	C CAPACITOR	1uF 10V Z
C311	NDC31HJ-150X	C CAPACITOR	15pF 50V J
C312	NCB31HK-562X	C CAPACITOR	5600pF 50V K
C313	NCB31HK-333X	C CAPACITOR	0.033uF 50V K
C314	NCB31HK-333X	C CAPACITOR	0.033uF 50V K
C315	NCB30JK-225X	C CAPACITOR	2.2uF 6.3V K
C316	NCB30JK-105X	C CAPACITOR	1uF 6.3V K
C319	NCB31HK-103X	C CAPACITOR	0.01uF 50V K
C320	NCB31HK-103X	C CAPACITOR	0.01uF 50V K
C321	NCB31HK-103X	C CAPACITOR	0.01uF 50V K
C322	NEH71HM-335X	E CAPACITOR	3.3uF 50V M
C323	NCB31HK-104X	C CAPACITOR	0.1uF 50V K
C324	NCF31AZ-105X	C CAPACITOR	1uF 10V Z
C325	NEH71CM-106X	E CAPACITOR	10uF 16V M
C329	NCB31HK-104X	C CAPACITOR	0.1uF 50V K
C330	NEH71CM-106X	E CAPACITOR	10uF 16V M
C331	NCB31HK-682X	C CAPACITOR	6800pF 50V K
C332	NCB31HK-104X	C CAPACITOR	0.1uF 50V K
C333	NEH71CM-106X	E CAPACITOR	10uF 16V M
C334	NDC31HJ-561X	C CAPACITOR	560pF 50V J
C335	NDC31HJ-561X	C CAPACITOR	560pF 50V J
C336	NDC31HJ-561X	C CAPACITOR	560pF 50V J
C338	NDC31HJ-102X	C CAPACITOR	1000pF 50V J
C901	NEH71CM-106X	E CAPACITOR	10uF 16V M
C902	NEH71CM-106X	E CAPACITOR	10uF 16V M
C903	NCB10JK-106X	C CAPACITOR	10uF 6.3V K
C904	NEH71CM-106X	E CAPACITOR	10uF 16V M
C905	NEH71CM-106X	E CAPACITOR	10uF 16V M
C906	NCB20JK-225X	C CAPACITOR	2.2uF 6.3V K
C907	NCF31AZ-105X	C CAPACITOR	1uF 10V Z
C908	NCF31AZ-105X	C CAPACITOR	1uF 10V Z
C909	NCB20JK-225X	C CAPACITOR	2.2uF 6.3V K
C910	NDC31HJ-471X	C CAPACITOR	470pF 50V J
C911	NEH71CM-106X	E CAPACITOR	10uF 16V M
C912	NCB11CK-225X	C CAPACITOR	2.2uF 16V K
C913	NCB20JK-225X	C CAPACITOR	2.2uF 6.3V K
C914	NDC31HJ-471X	C CAPACITOR	470pF 50V J
C915	NEH70JM-107X	E CAPACITOR	100uF 6.3V M
C916	NEH71CM-106X	E CAPACITOR	10uF 16V M
C917	NEH71CM-106X	E CAPACITOR	10uF 16V M
C918	NEH71CM-106X	E CAPACITOR	10uF 16V M
R001	NRSA63J-102X	MG RESISTOR	1kΩ 1/16W J
R002	NRSA63J-104X	MG RESISTOR	100kΩ 1/16W J
R003	NRSA63J-102X	MG RESISTOR	1kΩ 1/16W J
R004	NRSA63J-102X	MG RESISTOR	1kΩ 1/16W J
R005	NRSA63J-102X	MG RESISTOR	1kΩ 1/16W J
R018	NRSA63J-102X	MG RESISTOR	1kΩ 1/16W J
R019	NRSA63J-102X	MG RESISTOR	1kΩ 1/16W J
R020	NRSA63J-102X	MG RESISTOR	1kΩ 1/16W J
R024	NRSA63J-472X	MG RESISTOR	4.7kΩ 1/16W J
R027	NRSA63J-472X	MG RESISTOR	4.7kΩ 1/16W J
R030	NRSA63J-472X	MG RESISTOR	4.7kΩ 1/16W J
R032	NRSA63J-472X	MG RESISTOR	4.7kΩ 1/16W J
R034	NRSA63J-103X	MG RESISTOR	10kΩ 1/16W J
R035	NRSA63J-103X	MG RESISTOR	10kΩ 1/16W J
R036	NRSA63J-103X	MG RESISTOR	10kΩ 1/16W J
R037	NRSA63J-103X	MG RESISTOR	10kΩ 1/16W J
R038	NRSA63J-103X	MG RESISTOR	10kΩ 1/16W J
R042	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J
R043	NRSA63J-472X	MG RESISTOR	4.7kΩ 1/16W J
R044	NRSA63J-472X	MG RESISTOR	4.7kΩ 1/16W J
R054	NRSA63J-390X	MG RESISTOR	39Ω 1/16W J
R055	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J
R057	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J
R058	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J
R059	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J
R060	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J
R061	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J
R087	NRSA63J-221X	MG RESISTOR	220Ω 1/16W J
R089	NRSA63J-221X	MG RESISTOR	220Ω 1/16W J
R090	NRSA63J-221X	MG RESISTOR	220Ω 1/16W J
R091	NRSA63J-102X	MG RESISTOR	1kΩ 1/16W J
R092	NRSA63J-102X	MG RESISTOR	1kΩ 1/16W J
R093	NRSA63J-102X	MG RESISTOR	1kΩ 1/16W J
R094	NRSA63J-102X	MG RESISTOR	1kΩ 1/16W J
R095	NRSA63J-473X	MG RESISTOR	47kΩ 1/16W J
R096	NRSA63J-102X	MG RESISTOR	1kΩ 1/16W J
R097	NRSA63J-221X	MG RESISTOR	220Ω 1/16W J
R098	NRSA63J-221X	MG RESISTOR	220Ω 1/16W J
R099	NRSA63J-152X	MG RESISTOR	1.5kΩ 1/16W J
R100	NRSA63J-222X	MG RESISTOR	2.2kΩ 1/16W J
R101	NRSA63J-103X	MG RESISTOR	10kΩ 1/16W J
R112	NRSA63J-102X	MG RESISTOR	1kΩ 1/16W J
R113	NRSA63J-103X	MG RESISTOR	10kΩ 1/16W J
R114	NRSA63J-103X	MG RESISTOR	10kΩ 1/16W J
R115	NRSA63J-103X	MG RESISTOR	10kΩ 1/16W J
R116	NRSA63J-103X	MG RESISTOR	10kΩ 1/16W J
R124	NRSA63J-101X	MG RESISTOR	100Ω 1/16W J
R127	NRSA63J-103X	MG RESISTOR	10kΩ 1/16W J
R128	NRSA63J-103X	MG RESISTOR	10kΩ 1/16W J
R129	NRSA63J-823X	MG RESISTOR	82kΩ 1/16W J
R130	NRSA63J-104X	MG RESISTOR	100kΩ 1/16W J
R131	NRSA63J-102X	MG RESISTOR	1kΩ 1/16W J
R133	NRSA63J-473X	MG RESISTOR	47kΩ 1/16W J
R134	NRSA63J-473X	MG RESISTOR	47kΩ 1/16W J
R135	NRSA63J-102X	MG RESISTOR	1kΩ 1/16W J
R136	NRSA63J-103X	MG RESISTOR	10kΩ 1/16W J
R137	NRSA63J-222X	MG RESISTOR	2.2kΩ 1/16W J
R138	NRSA63J-222X	MG RESISTOR	2.2kΩ 1/16W J
R139	NRSA63J-222X	MG RESISTOR	2.2kΩ 1/16W J
R141	NRSA63J-103X	MG RESISTOR	10kΩ 1/16W J
R142	NRSA63J-101X	MG RESISTOR	100Ω 1/16W J
R143	NRSA63J-103X	MG RESISTOR	10kΩ 1/16W J
R147	NRSA63J-472X	MG RESISTOR	4.7kΩ 1/16W J
R151	NRSA63J-183X	MG RESISTOR	18kΩ 1/16W J
R152	NRSA63J-221X	MG RESISTOR	220Ω 1/16W J

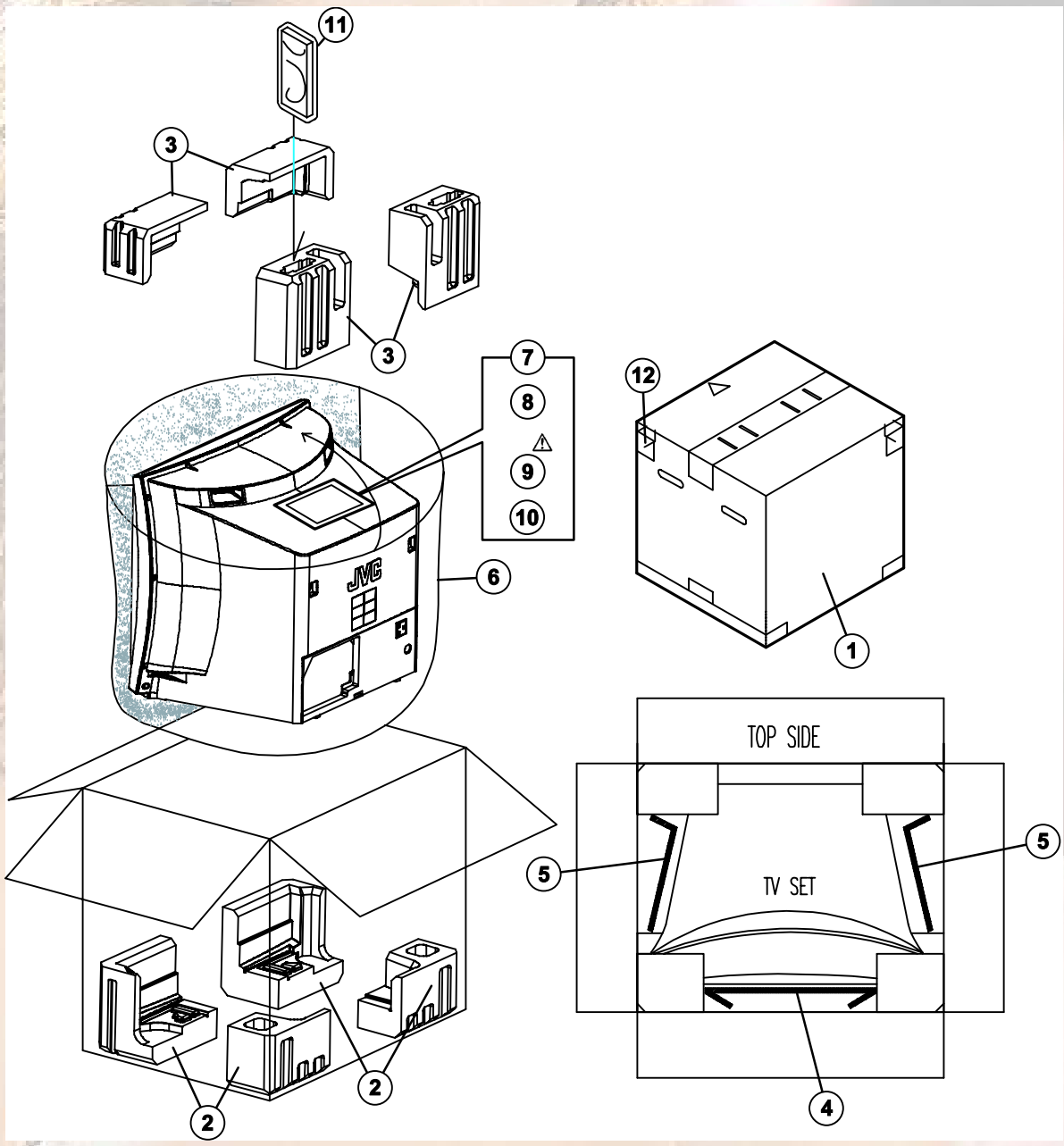
⚠Ref No.	Part No.	Part Name	Description	Local
R153	NRSA63J-221X	MG RESISTOR	220Ω 1/16W J	
R154	NRSA63J-221X	MG RESISTOR	220Ω 1/16W J	
R155	NRSA63J-101X	MG RESISTOR	100Ω 1/16W J	
R156	NRSA63J-101X	MG RESISTOR	100Ω 1/16W J	
R158	NRSA63J-221X	MG RESISTOR	220Ω 1/16W J	
R165	NRSA63J-103X	MG RESISTOR	10kΩ 1/16W J	
R169	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J	
R170	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J	
R171	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J	
R172	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J	
R174	NRSA63J-221X	MG RESISTOR	220Ω 1/16W J	
R175	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J	
R176	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J	
R177	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J	
R201	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J	
R202	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J	
R203	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J	
R204	NRSA63J-222X	MG RESISTOR	2.2kΩ 1/16W J	
R205	NRSA63J-222X	MG RESISTOR	2.2kΩ 1/16W J	
R206	NRSA63J-222X	MG RESISTOR	2.2kΩ 1/16W J	
R207	NRSA63J-222X	MG RESISTOR	2.2kΩ 1/16W J	
R208	NRSA63J-222X	MG RESISTOR	2.2kΩ 1/16W J	
R209	NRSA63J-222X	MG RESISTOR	2.2kΩ 1/16W J	
R210	NRSA63J-222X	MG RESISTOR	2.2kΩ 1/16W J	
R211	NRSA63J-222X	MG RESISTOR	2.2kΩ 1/16W J	
R212	NRSA63J-222X	MG RESISTOR	2.2kΩ 1/16W J	
R213	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J	
R214	NRSA63J-101X	MG RESISTOR	100Ω 1/16W J	
R215	NRSA63J-101X	MG RESISTOR	100Ω 1/16W J	
R216	NRSA63J-102X	MG RESISTOR	1kΩ 1/16W J	
R217	NRSA63J-682X	MG RESISTOR	6.8kΩ 1/16W J	
R219	NRSA63J-103X	MG RESISTOR	10kΩ 1/16W J	
R220	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J	
R221	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J	
R222	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J	
R301	NRSA63J-562X	MG RESISTOR	5.6kΩ 1/16W J	
R302	NRSA63J-103X	MG RESISTOR	10kΩ 1/16W J	
R303	NRSA63J-223X	MG RESISTOR	22kΩ 1/16W J	
R304	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J	
R305	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J	
R306	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J	
R309	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J	
R310	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J	
R311	NRSA63J-683X	MG RESISTOR	68kΩ 1/16W J	
R314	NRSA63J-471X	MG RESISTOR	470Ω 1/16W J	
R315	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J	
R318	NRSA63J-183X	MG RESISTOR	18kΩ 1/16W J	
R319	NRSA63J-222X	MG RESISTOR	2.2kΩ 1/16W J	
R320	NRSA63J-223X	MG RESISTOR	22kΩ 1/16W J	
R321	NRSA63J-103X	MG RESISTOR	10kΩ 1/16W J	
R322	NRSA63J-332X	MG RESISTOR	3.3kΩ 1/16W J	
R323	NRSA63J-332X	MG RESISTOR	3.3kΩ 1/16W J	
R324	NRSA63J-103X	MG RESISTOR	10kΩ 1/16W J	
R325	NRSA63J-563X	MG RESISTOR	56kΩ 1/16W J	
R326	NRSA63J-682X	MG RESISTOR	6.8kΩ 1/16W J	
R327	NRSA63J-682X	MG RESISTOR	6.8kΩ 1/16W J	
R328	NRSA63J-102X	MG RESISTOR	1kΩ 1/16W J	
R329	NRSA63J-682X	MG RESISTOR	6.8kΩ 1/16W J	
R330	NRSA63J-104X	MG RESISTOR	100kΩ 1/16W J	
R331	NRSA63J-101X	MG RESISTOR	100Ω 1/16W J	
R332	NRSA63J-101X	MG RESISTOR	100Ω 1/16W J	
R333	NRSA63J-103X	MG RESISTOR	10kΩ 1/16W J	
R334	NRSA63J-102X	MG RESISTOR	1kΩ 1/16W J	
R336	NRSA63J-182X	MG RESISTOR	1.8kΩ 1/16W J	
R337	NRSA63J-682X	MG RESISTOR	6.8kΩ 1/16W J	
R338	NRSA63J-332X	MG RESISTOR	3.3kΩ 1/16W J	
R339	NRSA63J-102X	MG RESISTOR	1kΩ 1/16W J	
R341	NRSA63J-272X	MG RESISTOR	2.7kΩ 1/16W J	
R342	NRSA63J-470X	MG RESISTOR	47Ω 1/16W J	
R343	NRSA63J-330X	MG RESISTOR	33Ω 1/16W J	
R344	NRSA63J-151X	MG RESISTOR	150Ω 1/16W J	
R345	NRSA63J-471X	MG RESISTOR	470Ω 1/16W J	
R346	NRSA63J-330X	MG RESISTOR	33Ω 1/16W J	
R347	NRSA63J-151X	MG RESISTOR	150Ω 1/16W J	
R348	NRSA63J-471X	MG RESISTOR	470Ω 1/16W J	
R349	NRSA63J-330X	MG RESISTOR	33Ω 1/16W J	
R350	NRSA63J-151X	MG RESISTOR	150Ω 1/16W J	
R351	NRSA63J-471X	MG RESISTOR	470Ω 1/16W J	
R352	NRSA63J-471X	MG RESISTOR	470Ω 1/16W J	
R353	NRSA63J-271X	MG RESISTOR	270Ω 1/16W J	
R354	NRSA63J-471X	MG RESISTOR	470Ω 1/16W J	
R355	NRSA63J-471X	MG RESISTOR	470Ω 1/16W J	
R357	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J	
R358	NRSA63J-470X	MG RESISTOR	47Ω 1/16W J	
R359	NRSA63J-103X	MG RESISTOR	10kΩ 1/16W J	
R360	NRSA63J-103X	MG RESISTOR	10kΩ 1/16W J	
R362	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J	

⚠Ref No.	Part No.	Part Name	Description	Local
R901	NRS12BJ-101W	MG RESISTOR	100Ω 1/2W J	
R902	NRS12BJ-101W	MG RESISTOR	100Ω 1/2W J	
R904	NRSA63J-471X	MG RESISTOR	470Ω 1/16W J	
R905	NRSA63J-471X	MG RESISTOR	470Ω 1/16W J	
RA001	NRZ0040-0R0X	NET RESISTOR	0Ω 1/16W J x4	
RA002	NRZ0040-0R0X	NET RESISTOR	0Ω 1/16W J x4	
RA003	NRZ0040-0R0X	NET RESISTOR	0Ω 1/16W J x4	
RA004	NRZ0040-0R0X	NET RESISTOR	0Ω 1/16W J x4	
RA005	NRZ0040-0R0X	NET RESISTOR	0Ω 1/16W J x4	
RA006	NRZ0040-0R0X	NET RESISTOR	0Ω 1/16W J x4	
RA007	NRZ0040-0R0X	NET RESISTOR	0Ω 1/16W J x4	
RA008	NRZ0040-0R0X	NET RESISTOR	0Ω 1/16W J x4	
L001	NQL092K-4R7X	COIL	4.7uH K	
L003	NQL092K-4R7X	COIL	4.7uH K	
L005	NQL092K-4R7X	COIL	4.7uH K	
L006	NQL092K-4R7X	COIL	4.7uH K	
L007	NQL092K-4R7X	COIL	4.7uH K	
L008	NQL092K-4R7X	COIL	4.7uH K	
L009	NQL034K-4R7X	COIL	4.7uH K	
L010	NQL092K-4R7X	COIL	4.7uH K	
L011	NQL092K-4R7X	COIL	4.7uH K	
L012	NQL092K-4R7X	COIL	4.7uH K	
L013	NQL092K-4R7X	COIL	4.7uH K	
L014	NQL092K-4R7X	COIL	4.7uH K	
L015	NQL034K-4R7X	COIL	4.7uH K	
L016	NQL034K-4R7X	COIL	4.7uH K	
L020	NQL092K-1R5X	COIL	1.5uH K	
L021	NQL092K-1R5X	COIL	1.5uH K	
L201	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J	
L202	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J	
L203	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J	
L301	NQL034K-100X	COIL	10uH K	
L901	NQL034K-100X	COIL	10uH K	
L902	NRS181J-0R0X	MG RESISTOR	0Ω 1/8W J	
L903	NQL034K-100X	COIL	10uH K	
L904	NQL034K-100X	COIL	10uH K	
K001	NQR0389-003X	FERRITE BEADS		
K002	NQR0389-003X	FERRITE BEADS		
K003	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J	
K901	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J	
K902	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J	
K905	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J	
K906	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J	
K907	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J	
K908	NRSA63J-0R0X	MG RESISTOR	0Ω 1/16W J	
LC001	NQR0415-003X	EMI FILTER	0.47uF 16V M	
LC002	NQR0415-003X	EMI FILTER	0.47uF 16V M	
X001	NAX0618-001X	CRYSTAL		
X201	NAX0548-001X	CRYSTAL		
X301	NAX0619-001X	CRYSTAL		

REMOTE CONTROL UNIT PARTS LIST (RM-C1351-1H) (RM-C1350-2H)

⚠Ref No.	Part No.	Part Name	Description	Local
	R25-8566	BATTERY COVER		

PACKING



PACKING PARTS LIST

⚠	Ref.No.	Part No.	Part Name	Description	Local
	1	GG10044-081A-H	PACKING CASE		HV-29JH24
	1	GG10282-020A-H	PACKING CASE		HV-29JH74/G
	2	GG10279-001A-H	CUSHION ASSY(BOTTOM)	4pcs in 1set	
	3	GG10289-001A-H	CUSHION ASSY(TOP)	4pcs in 1set	
	4	GG20011-011A-H	SUPPORT PAD(FRONT)		HV-29JH24
	5	GG20011-012A-H	SUPPORT PAD(SIDE)	(x2)	HV-29JH24
	6	GG30097-004A-H	POLY BAG		
	7	GG30096-001A-H	POLY BAG		
	8	----------	BATTERY	R6P/AA(x2)	
	9	GGT0056-001A-H	INST BOOK		
	10	GGT0057-001A-H	DIGEST MANUAL		HV-29JH74/G
	11	RM-C1351-1H	REMOCON UNIT	Inc.POLY BAG	HV-29JH24
	11	RM-C1350-2H	REMOCON UNIT	Inc.POLY BAG	HV-29JH74/G
	12	GG20025-005A-H	CORNER LABEL	(x2)	